KW APPARECCHI SCIENTIFICI

BLOODline

Medical devices for
transfusion centres

www.kwkw.it

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KW BIRTHDAY 60 years!

ISO 9001:2008 ISO 13485:2012 ISO 14001:2004 OHSAS 18001 2007

BLOODline

Devices for blood conservation and its derivates

CONTACTS:

Managing Director: **management@kwkw.it**
Technical Production Manager: **technician@kwkw.it**
Tender Commercial Office: **customorservice@kwkw.it**
International Sales Manager: **expdpt@kwkw.it**
Technical Support & Spare Parts: **assistenza@kwkw.it**
Service line: **service@kwkw.it**
Delivery Office: **delivery@kwkw.it**
Administration: **administration@kwkw.it**

BloodLine

Devices for blood conservation and its derivates

Characteristics of this series represent the answer to all conservation exigeances: blood, plasma, platelets and red blood cells. KW has realized a very complete series of blood bank refrigerators, cold rooms, freezers, thawers, incubators and portable refrigerators, in order to satisfy requests of little and big blood transfusion centres for hospitals, care houses, analisys laboratories, surgery rooms, etc.

KW Bloodline® series refrigerators and freezers can be validated, following GMP rules, as regards T uniformity and stability.

Blood Banks KLAB-BBR

CONTROL NIA

Green ICE

KLAB-BBR 700V NIA
Blood Bank

Blood Banks Medical Project KBBR-KBPR

Green ICE

Antibacterial

KBBR 400V AC

KBBR 180V AC

Plasma Freezers -40°C -86°C PL - PLL

USB

K54EPL/PLL
Plasma Freezer (-40°C/-80°C)

K60PL/PLL

Plasma Freezers -20°C -45°C

Green ICE

Many capacities available
(from 200 to 600 liters)

KBPF 600X PP
Plasma freezer

KBPF 600X PP/2D
Plasma freezer

Plasma Freezers -20°C -86°C - Biological Bank HPL - HPLL

TOTAL CONNECTIVITY
TOTAL TRACEABILITY
CONTROLLED ACCESS

7" TFT Display Touch Screen

USB

SIM
GSM

ETHERNET

SD

CERTIFIED CLASS IIA MEDICAL DEVICE

HPL UltraSlim Freezers -40°C -86°C

NEW

SAVE SPACE IN YOUR LABORATORY!

Reduced Footprint

7" TFT Display Touch Screen

VIP PANEL

K58USHPL

Plasma Fast Freezers

KPFF 24B
Plasma Fast Freezing

BAGS TEMPERATURE RECORDER

USB

KPFF 48B
Plasma Fast Freezing

Plasma Thawer/ Red Cell Warmer

USB

SD

Plasma & Stem Cell
Thawer

SIM
GSM

ETHERNET

MODEL
WPFD - WSCFD 3/6

Display Touch Screen

Platelet Incubator/Agitator

K1P Control

HPL Control

USB

WR-KWAP+AGITATOR

BloodLine

“the widest cold and incubation chain in the transfusion center and in certified laboratory”

CERTIFICATION IN CONFORMITY WITH DIRECTIVE 2007/47 ON MEDICAL DEVICES

The refrigeration line of KW (a brand that has been on the market for OVER 60 YEARS !) is made according to manufacturing **standards that meet UNI EN ISO 9001:2008 and ISO 13485:2003.** It is designed for **medical applications** (transfusion centres, transplant banks, stem cells, test laboratories, etc.) and also for pharmaceutical, biotechnological applications and in any other sector where validation and certification is required.

All models bear the prestigious certification to Directive 2007/47 CE.

THE KPFF series FAST FREEZERS also meet PED DIRECTIVE 97/23 CE.

TRADITION & DIGITAL REFRIGERATION WITH NEW ICE AGE (NIA) and NEW TOUCH SCREEN TECNOLOGY (HPL) and WITH Wi-Fi DATA LOGGERS (SPY KW), all certified in compliant with MDD 93/42 – 2007/47 CE.

The application of the **NIA controller** and now **HPL** (the result of KW’s know how and expertise) allows the entire KW range of refrigerators, blood bank fridges and freezers to be connected with a PC, with local data networks and with an external data monitoring and filing system, which can all be tracked from any other site through the Internet, etc. This offers, the best and utmost traceability of all the data and all events (alarms, blackouts, door openings/closings, accesses, etc.) useful for correct management of the blood, blood components, products and biological materials stored, according to **ISO, SINAL, GLP** standards (also according to CFR21 part. 11).

GREEN ICE PROJECT

KW is designing its laboratory refrigerators/freezers researching the best performance, with the lowest energy consumption and the least environmental impact. A permanent KW team researches into new solutions implementing dedicated equipment (test chambers) and software for C.O.P. (coefficient of performance) assessment, in accordance with environment protection laws.

CSQ

CERTIFICATO N. 9120.KW01

KW APPARECCHI SCIENTIFICI SRL

ISO 9001:2008

2010-05-26 2013-05-30 2016-05-25

CISQ

CSQ MED

CERTIFICATO N. 9124.KW02

KW APPARECCHI SCIENTIFICI SRL

EN ISO 13485:2012

2010-05-26 2013-05-30 2016-05-26

CISQ

BloodLine

"the widest cold and incubation chain in the transfusion center and in certified laboratory"

FLEXIBILITY – VERSATILITY – INNOVATION - EXCPETIONAL USABILITY

KW offer a very comprehensive range of equipment from the compact model to the freezer and to the very high capacity refrigerator (over 700 – 1500 litres), to meet all purposes and any functional solution …

KW offers all types of materials : from stainless steel (AISI 304-AISI316) to painted sheet metals, to plastics antibacteria,...

KW offers a very comprehensive series of accessories … -> so customers can custom build their refrigerator from the catalogue … CUSTOM SOLUTION …

KW offers GI = GREEN ICE solutions, with low energy consumption and high operating performance through the use of new refrigeration and lighting technologies, new materials, etc.

KW offers unique solutions with regard to ANTIBACTERIAL materials … special plastic compounds and sheet metals for the utmost hygiene and cleanliness and minimal risk of the growth of microorganisms!!!

KW offers the TG = Twin Group solution, with an exclusive operating logic that consists of two completely independent refrigeration systems, connected functionally and operating alternately.

KW offers SPLIT = remote unit solutions, with remote motor condensing units (away from the work area) owing to matters of size, thermal and noise pollution and ease of maintenance.

TFT 7" touch screen display (HPL) allows a complete and easy control (also from the distance) of the equipment: is easily readable from the distance, with a real time graphic of temperatures and of other functions always visible from the home page

CSQ H&S — IQNet

CERTIFICATO N. / CERTIFICATE N. 9192.KW04

KW APPARECCHI SCIENTIFICI SRL

BS OHSAS 18001:2007

2012-07-10 2012-07-10 2015-07-09

MEDICAL DEVICE

DIRECTIVE 2007/47 CE

CSQ ECO — IQNet

CERTIFICATO N. / CERTIFICATE N. 9191.KW03

KW APPARECCHI SCIENTIFICI SRL

ISO 14001:2004

2011-04-28 2014-05-05 2017-05-05

BloodLine

“the widest cold and incubation chain in the transfusion center and in certified laboratory”

UTMOST PRODUCT SAFETY, ENERGY SAVING - FINE USABILITY

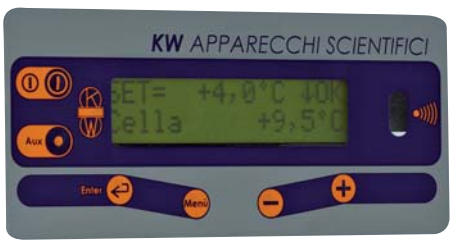
The application of the **NIA controller and/or HPL touch screen technology** (together with all the other manufacturing and thermodynamic features) makes KW refrigeration equipment particularly reliable and with a low environmental and energy impact, through a series of functions/parameters and recordings that ensure the utmost efficiency, top levels of operating safety and the best compatibility with the environment, including the routine operations of the laboratory for which they are intended.

√ Smart defrost (on some KLAB models), no frost solutions (all appliances, except some KLAB models), safety control, disaster recovery, environment adaptability, voltage stabilizer, integrated data logger function:

- Utmost safety of the material stored, even in the event of T sensor or CPU fault!
- Utmost ease of access and reading of all the controls and parameters on the LCD display and/ or on the TFT 7” touch screen display (HPL); this one is easily readable from the distance, with a real time graphic of temperatures and of other functions always visible from the home page
- Utmost ease of data configuration, programming, control, filing and monitoring, exportation of filed data to PC or in the network -> SD card (HPL) with frontal access :it can store several years data recording and relevant documents such as manuals, list of spare parts, videos regarding installation and most common operations
- USB port (in NIA and HPL controllers) allows to download data directly from the front panel
- Multimedia section (HPL) with tutorial area permits to read instruction movies, service manuals, electrical drawings, and so on.
- RS 485 (NIA and HPL) and RJ45 (HPL) port allow to connect the equipment with LAN/Ethernet
- Several passwords for the turning on and off of the equipment, to change the set point, to access to the parameters or to the menu; to protect from unauthorized users
- Slot for SIM Card(HPL)
- Independent alarm and recording system with an accuracy of 0,1°C through RTD Pt 100 probes. NIA and HPL manage alarms functions and are supplied by standard rechargeable batteries to record T and all events in case of power failure (up to 48 hours of temperature data logging on SD CARD, through 8 AA Ni-MH rechargeable batteries)

The data downloading is managed by the software KW TRACER (for HPL) and READER -USB (for NIA) .
Thanks these SW it is possible to produce graphics and tabs of recorded data.

CONTROL HPL



CONTROL NIA

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"the widest cold and incubation chain in the transfusion center and in certified laboratory"

Besides:

- SMART DEFROSTING elettrical and hot gas.
- SOLUTIONS NO FROST.
- ECOMODE
- NIGHT & DAY
- ENERGY SAVING

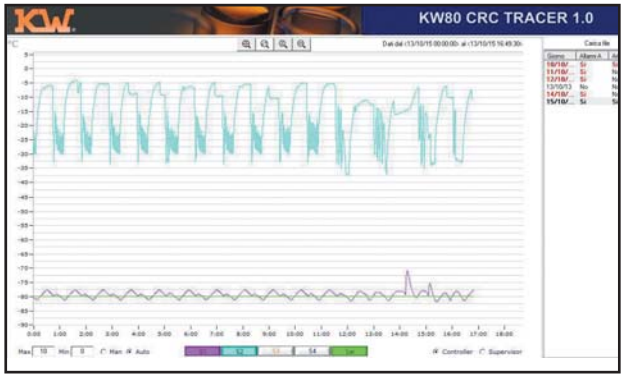
- Airtight, noiseless and powerful compressors with specific lubricants for low T
- New solutions to prevent frost from forming inside above all in ULT freezers

Functions to save a lot of energy, in refrigerators and in freezers with simple or double stage of compression.

ADJUSTMENT, CONTROL, SAFETY, USER FRIENDLINESS, ECO-FRIENDLINESS

WITH* NEW ICE AGE (NIA) *and/or* HIGH PERFORMANCE LINE (HPL) *controllers
please see specific technical literatures for a complete description

- **16-character LCD display,** for NIA controller
- **Video – graphic interface** = color touch screen display 7" TFT; micro processor ARM9 technology, for HPL controller
- **Several access password**
- **PT 100 sensors in class A**
- **2 ch PT 100** for independent T control and alarms
- Key Test = manual alarm simulation
- **Disaster recovery** (CPU controller fault, but appliance working!)
- Safety Control (faulty sensors, but appliance working!)
- **Environmental adaptability** (adaptation to laboratory environmental conditions)
- **Data logger functions** (continuous recording of all the parameters and alarms)
- **Full connectivity to the environmental,**
  -with Wi-Fi or Ethernet port; slot for SIM, USB port and RS485 port, with ModBus protocol! (**HPL**)
  -with USB port and RS485 port (**NIA**)
- Service Check
- Info test
- Data export with USB port and graphics and tabs thanks the software
- All the possible alarms and electrical autonomy!
  and also :
- **PK personal Key** = electronic key, which allows door opening/closing through electronic transponder or directly from the control panel, entering a code (HPL)
- High level of user-friendliness with special handle, compensation valve, etc.



SOFTWARE USB READER

BloodLine

"the widest cold and incubation chain in the transfusion center and in certified laboratory"

High performance thermodynamic project with

√ Very high thermal insulation at very low conductivity (from 140 to 175 mm. in -80°C and -40°C freezers!), also with VIPs (Vacuum Insulation Panels), and many internal counter doors (up to 4 or more upon request)

√ The VIPs are standard for several models and an optional feature for each model; with them, KW guarantees an energy saving of 18%-20% , retaining the average thickness or a big reduction of the footprint through a very small insulation thickness (until 80 mm. in ULT SLIM freezers)

√ Environmental impact: also the thermoplastic materials used are recyclable and free of chlorinated substances and heavy metals

√ Insulated internal counter doors to minimize heat returns

√ Triple silicone seal, to minimize heat returns

√ Double outer door (2D), to minimize heat returns

√ Highly extensive range of interior accessories to minimize search times and expose samples not intended for withdrawal to minimum heating

√ Inside/outside pressure compensation valve (from – 20°C downwards) to facilitate opening and closing at short intervals sample storage

√ No defrosting solutions (except the KLAB series) below – 20°C

√ Led lighting and very low consumption fans (in the KLAB and Medical Project series)

√ WATER CONDENSATION for minimal environmental impact, with pressure switch valve

√ Max energy saving

√ Max warm up time, in case of failure, (for example, over 220 min. for a 350 liters –80°C vertical freezer), essential for correct sample storage

√ Energy analyzer in HPL controller

√ Utmost stability and uniformity of the inside T, essential for correct sample storage

√ Minimal recovery time, essential for correct sample storage

√ Max room T over +32°C/+35°C, with air condensation

√ Minimal need for maintenance

√ Utmost product protection

√ Minimal compressor wear

KUB75PL V.I.P.
CONG. -80"C

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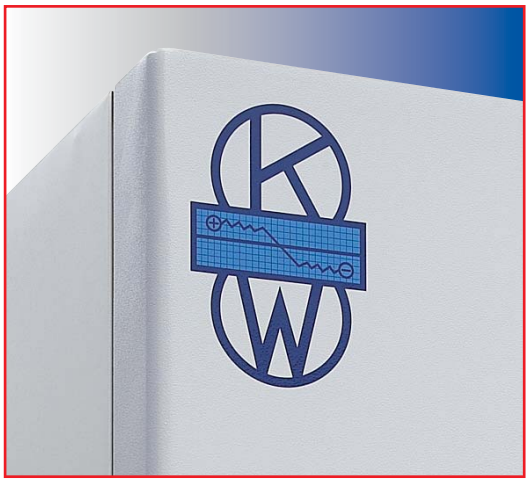

√ Powerful airtight compressors (up to 1.7 HP in the higher capacity models)
√ Innovative condensers (high turbulence & tubeless …up to 2600 W of thermal exchange),
√ Expansion with STANDARD capillary tube (except some PLL and HPLL models)
√ Expansion with STANDARD thermostatic valve for the PLL and HPLL series (from 350 litres upwards), EXTRA cooling energy for the new samples: this solution allows to have a large reserve of cold for the samples stored (especially plasma bags!)
√ Expansion with OPTIONAL thermostatic valve for certain models at - 80°C, EXTRA cooling energy for the samples stored (especially plasma bags!)
√ ***TG solutions,*** for the highest level of safety -> 2 (at 100%) power units, also for ULT freezers (from -20°C until -80°C)
√ SPLIT solutions, for minimal impact in the laboratory

√ ***ECOFRIENDLY COOLANTS,*** braze welded and airtight circuits, reduced loads with compact circuits (for example, application of single-body systems on the KLAB models)
- Internal circuit pressure control system of the two refrigerating stages (in - 80°C models). The system continuously evaluates the T and pressure conditions of the two refrigerating flows, as well as the thermal exchange condition with the environment, in order to establish a constant balance between the flows of the two stages
- Minimum pull down time,
- Minimum recovery time,
- Maximum reserve refrigerating capacity (putting over 12 Kg of water at room T in a 500 l –86°C ultra freezer takes the T to no further than -76°C with a recovery time of 180 min.) = suitable for storing plasma bags, frozen at - 30°C with the KPFF fast freezers, with the storage and further cooling capacity of over 48 (450 ml. and or 1000 ml.) bags at a time
- Max room T over +32°C/+35°C
- Minimal need for maintenance
- Utmost product protection
- Minimal compressor wear
- Minimal thermal and noise pollution

√ CEI EN 61326-1 conformity
√ CEI EN 61010 –1 conformity
√ Machine Directive 2006/42/EC conformity
√ Low Voltage Directive 2006/95 CE conformity
√ Electromagnetic compatibility (EMC) 2004/108 CE conformity
√ **Medical Device Directive 2007/47**

DISPOSITIVI MEDICI

DIRETTIVA 2007/47 CE

BloodLine

NEW ULTRA LOW TEMPERATURE FREEZER

√ Thermodynamic Cycle Optimization

√ New materials for insulation

√ Optimization of the Circuit

√ Electronic Control of mating cycles of the compressor

√ Alternative materials to steel for the construction of Cabinet/Door

√ Improved Ergonomics Product / Space Management

√ Ability to Self-management/ adjustment of product and its Functions

√ Systems Management Acts to Reduce Samples Waste

√ Integration with Other Devices Friendly

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"the widest cold and incubation chain in the transfusion center and in certified laboratory"

WIRELESS REFRIGERATION (Wi/Fi)

please see specific technical literatures for a complete description

The integration (on KW refrigerators-freezers) of the **KW Spy data logger** also enables the radio transmission **(WiFi)** of measurement data; on a monitor, also away from the laboratory, it is possible to continuously view correct operation of the KW fridge/freezer, check and manage alarms and record all the information received on a digital medium.

KW is the first company to offer a wireless (WiFi) data logger, certified medical device according to Directive 2007/47 (class IIA).

The data loggers are equipped with dual power supply: internal batteries and external power supply. They allow to monitor a wide range of physical magnitudes; in fact they have one or two inputs that can be configured for reading:

RTD (resistance temperature detector) Pt 100 or Pt 1000 Ohm, analog signals 4/20 mA from multiple types of sensors (sensors of CO2, O2, pressure, etc.)

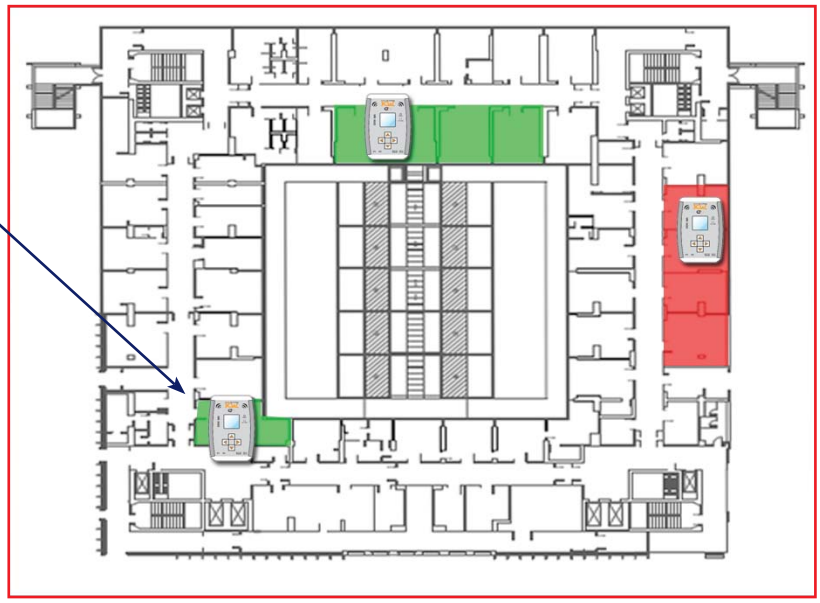
Thanks to a special sensor inside the module, it is possible to detect the **T and RH%** environment contributing to the safety and traceability of work areas. Recording capacity is over **250,000 records;** with a record per 5 minutes, it is possible to record up to 30 months! All records are sent, via wifi, to a PC, where it is a dedicated software and developed for recording and displaying data.

On the front panel of the data logger, is an ultra low power **LCD displays** where the values of the measured physical quantities and useful information such as the type of power, the state of charge of the battery, and the signal available for the data transfer.

The front buttons make it simple and intuitive both the use that the programming.

Logger WIFI

THE SUPERVISION SYSTEM KWSPY



MEDICAL DEVICE

DIRECTIVE 2007/47 CE

BloodLine

"the widest cold and incubation chain in the transfusion center and in certified laboratory"

DIGITAL REFRIGERATION WITH NEW ICE AGE or HPL & WiFi (all certified as Medical Device)

REFRIGERATION

The application (also at the same time) of the two systems allows:

√ Continuous supervision in safety of the state of preservation of the samples stored
√ Traceability of all events with continuous and highly accurate recording through a specific software
√ Considerable operating savings, during purchasing, installation and implementation and due to less samples lost owing to faults, etc.
√ Flexibility in the use of appliances, through wireless communication and with a broad range of alternative solutions
√ The solutions proposed by KW are compatible with the accreditation - certification of the laboratory they are intended for

CONTINUOUS RECORDING

• Also in the event of a PC failure/stoppage, both the NIA or HPL controllers and the KW Spy data logger continue to f ile data; data downloading is possible at any time via USB transceiver from the NIA, or from the HPL, and subsequently from any integrated Spy data logger!

GUARANTEED AUTONOMOUS OPERATION

• Both the NIA and HPL controllers and the KW Spy data logger are self-supplied by an internal rechargeable battery and are insensitive to blackouts

MEASURING ACCURACY

• The sensors used allow T measurement to the tenth of one or two degree centigrade **(±0.1°C or ±0.2°C),** inserted in air, in a suitable position; a THRU HOLE is provided in the case of connection to the KW Spy data logger

JUST IN TIME ALARMS

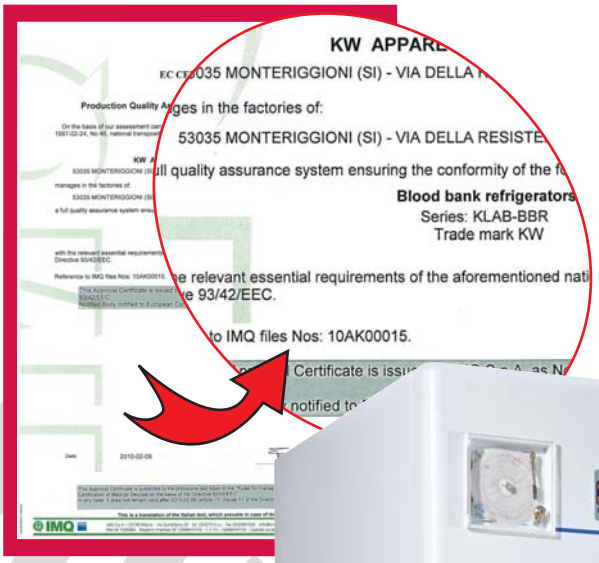
… the alarms are all recorded in real time
• In the NIA controller storage, with option for network viewing, with Web NIA Server, …
• Through KW Spy data logger, on the remote PC …
• Through clean ON/OFF contact …
… in any case communication is possible by e-mail, fax, sms, voice messages, etc.

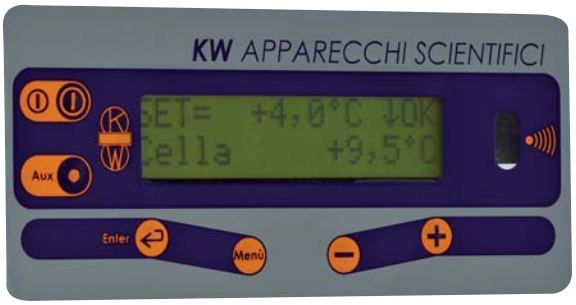
REMOTE CONTROL

• With the NIA controller + WEB NIA SERVER, or with HPL + WiFi/ Ethernet port it is possible to view (with password access) all the parameters, change these parameters (including the SET POINT), file data, etc.
And this is possible from any distance … the operation takes place by typing the IP address ….
• With the KW Spy data logger it is possible to remotely view (via radio waves and with password access) all the parameters, file data, etc.
• With the KW Spy data logger it is possible to remotely (with password access) read all the parameters, file data, etc.

BloodLine

Blood Bank KLAB-BBR


KW APPARE
EC Ce035 MONTERIGGIONI (SI) - VIA DELLA
Production Quality A ges in the factories of:
53035 MONTERIGGIONI (SI) - VIA DELLA RESISTE
ll quality assurance system ensuring the conformity of the f
Blood bank refrigerators
Series: KLAB-BBR
Trade mark KW
e relevant essential requirements of the aforementioned nati
e 93/42/EEC.
to IMQ files Nos: 10AK00015.
Certificate is issu
notified to
IMQ



KLAB-BBR 700V NIA

Green ICE

MEDICAL DEVICE

DIRECTIVE 2007/47 CE

BloodLine

Blood Bank KLAB-BBR

SERIES KLAB BLOOD BANKS Medical Device DIRECTIVE 2007/47 CE			
BLOOD BANK MODELS	KLAB-BBR 180V	KLAB-BBR 300V	KLAB-BBR 400V
External dimensions (WxDxH)	cm63x56,7x105	cm55x56,5x187,5	cm60x60x190
Internal dimensions (WxDxH)	cm54x41,5x65	cm47,5x47,5x147,5	cm50x50x135
Set Point	+4°C	+4°C	+4°C
Working range	0+10°C	0+10°C	0+10°C
Capacity (litres)	180	300	400
N° Glass door small emittance	1	1	1
Weight Kg	55	100	125
Internal surfaces standard	Coated Steel White	Coated Steel White	Coated Steel White
External surfaces standard	Coated Steel White	Coated Steel White	Coated Steel White
Antibacterial internal surface	NO	NO	ST
Insulation thickness	45mm	45mm	50mm
STANDARD			
N.° inox drawers (DRAX)	√(3)	√(7)	√(7)
N.° aluminium drawers (DRAL)	NO	√(7)	NO
N.° bags 450 ml	72 (24x3)	98 (14x7)	98 (14x7)
Shelves (SHE)	3	7	7
Key Lock	ST	ST	ST
Small rollers + stabilizing feets	√	√	√
Controller NIA (*)	ST	ST	ST
NTC Probe	ST	ST	ST
RS485 (Serial Access)	ST	ST	ST
AutomaticDefrosting	ST	ST	ST
Automatic evaporation of the condensation water	ST	ST	ST
(*) Controller NIA (display LCD, Smart defrost, HT, LT	BLACK OUT, failure list, door	open, switching on/off password, alarm memory, alarm test,	
OPTIONAL ACCESSORIES			
Completely inox	√	√	√
Aisi 304 dividing parts	√	√	√
Plastic dividing parts	√	√	√
Opening door by transponder personal key	NO	NO	NO
Temperature recorder	√	√	√
Web NIA Server (Rete Ethernet + GSM)	√	√	√
Printer (Strip Chart)	√	√	√
SD CARD recording data + software PC	√	√	√
Data logger wireless+software/hardware (temperature management Spy KW)	√	√	√
PT100 Probe	√	√	√
2 ch PT100 (control probe, alarm probe)	√	√	√
Product simulation probe	√	√	√
Additional PT100 probe (free contacts for external data management system: data logger wireless etc.)	√	√	√
IQ/QQ/ecc.	√	√	√
SPLIT	NO	NO	√
Internal - External hole	√	√	√

√	OPTIONAL
ST	STANDARD
NO	NOT AVAILABLE

SPLIT= models KLAB-BBR400 - 700 - 850 (also ADV) - 1500 (also ADV)
CAN BE EQUIPPED WITH REMOTE CONDENSING UNITS

V= Glass Door

C= Insulated Door

BloodLine

Blood Bank KLAB-BBR

SERIES KLAB BLOOD BANKS Medical Device DIRECTIVE 2007/47 CE				
KLAB-BBR 700V	KLAB-BBR 850V	KLAB-BBR 1500V	KLAB-BBR 700V ADV	KLAB-BBR1500V ADV
cm71x80x200	cm85x87x200	cm142x80x200	cm75x80x203	cm145x80x203
cm59x68x140	cm73x75x156	cm127x65x140	cm60x68x140	cm130x65x140
+4°C	+4°C	+4°C	+4°C	+4°C
0+10°C	0+10°C	0+10°C	0+10°C	0+10°C
700	850	1500	700	1500
1	1	2	1	2
150	180	240	150	260
Aisi 304 Stainless sheet	Aisi 304 Stainless sheet	Aisi 304 Stainless sheet	Aisi 304 Stainless sheet	Aisi 304 Stainless sheet
Coated Steel White	Coated Steel White	Coated Steel White	Coated Steel White	Coated Steel White
ST	ST	ST	ST	ST
60mm	60mm	60mm	75mm	75mm
√(7)	√(8) (9)	√(14)	√(7)	√(14)
NO	NO	NO	NO	NO
336	440 (8) - 495 (9)	672	336	672
7	8-9	14	7	14
ST	ST	ST	ST	ST
√	√	√	√	√
ST	ST	ST	ST	ST
ST	ST	ST	ST	ST
ST	ST	ST	ST	ST
ST	ST	ST	ST	ST
ST	ST	ST	ST	ST
SAFETY CONTROL, DISASTER RECOVERY, key alarm test)				
√	√	√	√	√
√	√	√	√	√
√	√	√	√	√
√	√	√	√	√
√	√	√	√	√
√	√	√	√	√
√	√	√	√	√
√	√	√	√	√
√	√	√	√	√
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√	√	√	√	√

BloodLine

Blood Bank KLAB-BBR

SERIES KLAB BLOOD BANKS TG Special Version (Twin-Group)				
BLOOD BANK MODELS	BBR 700V TG	BBR 1500V TG	BBR 700V ADV TG	BBR15000V ADV TG
External dimensions (WxDxH)	cm71x80x200	cm142x80x200	cm75x80x203	cm145x80x203
Internal dimensions (WxDxH)	cm59x68x140	cm127x65x140	cm60x68x140	cm130x65x140
Set Point	+4°C	+4°C	+4°C	+4°C
Working range	0+10°C	0+10°C	0+10°C	0+10°C
Capacity (litres)	700	1500	700	1500
N° Glass door small emittance	1	2	1	2
Weight Kg	170	270	180	290
Internal surfaces standard	Aisi 304 Stainless sheet	Aisi 304 Stainless sheet	Aisi 304 Stainless sheet	Aisi 304 Stainless sheet
External surfaces standard	Coated Steel White	Coated Steel White	Coated Steel White	Coated Steel White
Antibacterial internal surface	ST	ST	ST	ST
Insulation thickness	60mm	60mm	75mm	75mm
STANDARD				
N.° inox drawers (DRAX)	√(7)	√(14)	√(7)	√(14)
N.° aluminium drawers (DRAL)	NO	NO	NO	NO
N.° bags 450 ml	336	672	336	672
Shelves (SHE)	7	14	7	14
Key Lock	ST	ST	ST	ST
Small rollers + stabilizing feets	√	√	√	√
Controller NIA (*)	ST	ST	ST	ST
NTC Probe	ST	ST	ST	ST
RS485 (Serial Access)	ST	ST	ST	ST
AutomaticDefrosting	ST	ST	ST	ST
Automatic evaporation of the condensation water	ST	ST	ST	ST
(*) Controllore NIA (display LCD, Smart defrost, HT, LT, BLACK OUT, lista guasti, door open, accensione/spegnimento password, memoria allarmi, test allarmi, SAFETY CONTROL, DISASTER RECOVERY, key alarm test)				
OPTIONAL ACCESSORIES				
Completely inox	√	√	√	√
Aisi 304 dividing parts	√	√	√	√
Plastic dividing parts	√	√	√	√
Opening door by transponder personal key	√	√	√	√
Temperature recorder	√	√	√	√
Web NIA Server (Rete Ethernet + GSM)	√	√	√	√
Printer (Strip Chart)	√	√	√	√
SD CARD recording data + software PC	√	√	√	√
Data logger wireless+software/hardware (temperature management Spy KW)	√	√	√	√
PT100 Probe	√	√	√	√
2 ch PT100 (control probe, alarm probe)	√	√	√	√
Product simulation probe	√	√	√	√
Additional PT100 probe (free contacts for external data management system: data logger wireless etc.)	√	√	√	√
IQ/QQ/ecc.	√	√	√	√
SPLIT	√	√	√	√
Internal - External hole	√	√	√	√

√	OPTIONAL
ST	STANDARD
NO	NOT AVAILABLE

SPLIT= models KLAB-BBR400 - 700 - 850 (also ADV) - 1500 (also ADV)
CAN BE EQUIPPED WITH REMOTE CONDENSING UNITS

V= Glass Door

C= Insulated Door

BloodLine

Blood Bank Refrigerators Medical Project

KBBR-KBPR

KW APPARE
53035 MONTERIGGIONI (SI) - VIA
in the factories of:
53035 MONTERIGGIONI (SI) - VIA DELLA
ty assurance system ensuring the conformity of the
Blood bank refrigerator
: KBBR Type ref. As to annex document dated 06.04.2
stamp.
Trade mark Medical Project
: KBPR Type ref. As to annex document dated 06.04.20
stamp.
Trade mark Medical Projec
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Nos: 10AK00054.

MEDICAL DEVICE

DIRECTIVE 2007/47 CE

Antibacteria

Green ICE

KBBR 180V AC

KBBR 400V AC

BloodLine

Blood Bank Refrigerators Medical Project
KBBR-KBPR

SERIES BLOOD BANKS MEDICAL PROJECT KBBR/KBPR Medical Device 2007/47 CE					
MODEL medical project KBBR/KBPR	KBBR 180V-AC	KBBR 180C-AC	KBPR 180V-AC	KBPR 180C-AC	KBBR 310V-AC
External dimensions (WxDxH) (**)	cm61x62x104	cm61x62x104	cm61x62x104	cm61x62x104	cm60x62x177
Internal dimensions (WxDxH) (*)	cm(*)	cm(*)	cm(*)	cm(*)	cm(*)
Set Point	+4°C/+5°C	+4°C/+5°C	+4°C/+5°C	+4°C/+5°C	+4°C/+5°C
Working range	+0°C+10°C	+0°C+10°C	+0°C+10°C	+0°C+10°C	+0°C+10°C
Capacity (litres)	150	150	150	150	300
N° Glass door small emittance	1	Not Available	1	Not Available	1
Weight Kg	50	40	50	40	69
Internal surfaces standard	Coated Steel White	Coated Steel White	Coated Steel White	Coated Steel White	ABS thermo moulded
External surfaces standard	Coated Steel White	Coated Steel White	Coated Steel White	Coated Steel White	Coated Steel White
Antibacterial internal surface	ST	ST	ST	ST	ST
Insulation thickness	45mm	45mm	45mm	45mm	45mm
STANDARD					
Shelves (SHE)	3	3	3	3	4
N.° inox drawers (DRAX)	√(3)	√(3)	√(3)	√(3)	√(7)
N.° aluminium drawers (DRAL)	√(3)	√(3)	√(3)	√(3)	√(7)
N.° plastic drawers (DRAP)	√(3)	√(3)	√(3)	√(3)	√(7)
Plastic dividing parts	√	√	√	√	√
N.° bags 450 ml	50	50	50	50	98
Key Lock	ST	ST	ST	ST	ST
Controller NIA (*)	ST	ST	ST	ST	ST
(*) Controller NIA (display LCD, Smart defrost, HT, LT, BLACK OUT, failure list, door open, switching on/off password, alarm memory, alarm test,					
Supply failure alarm	√	√	√	√	√
NTC Probe	ST	ST	ST	ST	ST
RS485 (Serial Access)	ST	ST	ST	ST	ST
Automatic Defrosting without energy comsumption	ST	ST	ST	ST	ST
Automatic evaporation of the condensation water	ST	ST	ST	ST	ST
AVAILABLE ACCESSORIES					
Web NIA Server (Rete Ethernet + GSM)	√	√	√	√	√
Temperature recorder	ST	ST	√	√	ST
Printer (Strip Chart)	√	√	√	√	√
Kit Data Pocket (IR transceiver, IR receiver for PC, ColdMaster management software for storing T values and alarm events on PC)	√	√	√	√	√
Data logger wireless+software/hardware (temperature management Spy KW)	√	√	√	√	√
PT100 Probe	√	√	√	√	√
2 ch PT100 (control probe, alarm probe)	√	√	√	√	√
Product simulation probe	√	√	√	√	√
Additional PT100 probe (free contacts for external data management system: data logger wireless etc.)	√	√	√	√	√
Kit wheels	√	√	√	√	√
Internal - External hole	√	√	√	√	√
IQ/QQ/ecc.	√	√	√	√	√
GI green ice very low energy consumpation	NO	NO	NO	NO	√

V= Glass Door C= Insulated Door

√	OPTIONAL
ST	STANDARD
NO	Not Available

(**) = EXTERNAL DIMENSIONS INCLUDE THE SPACE FOR TEMPERATURE RACORDER ABOUT 20 CM. (*) = INTERNAL DIMENSIONS

BloodLine

Blood Bank Refrigerators Medical Project
KBBR-KBPR

SERIES BLOOD BANKS MEDICAL PROJECT KBBR/KBPR Medical Device 2007/47 CE						
KBBR 310C-AC	KBPR 310V-AC	KBPR 310C-AC	KBBR 400V-AC	KBBR 400C-AC	KBPR 400V-AC	KBPR 400C-AC
cm60x62x177	cm60x62x177	cm60x62x177	cm60x60x200	cm60x60x200	cm60x60x200	cm60x60x200
cm(*)	cm(*)	cm(*)	cm(*)	cm(*)	cm(*)	cm(*)
+4°C/+5°C	+4°C/+5°C	+4°C/+5°C	+4°C/+5°C	+4°C/+5°C	+4°C/+5°C	+4°C/+5°C
+0°C+10°C	+0°C+10°C	+0°C+10°C	+0°C+10°C	+0°C+10°C	+0°C+10°C	+0°C+10°C
300	300	300	360	360	360	360
Not Available	1	Not Available	1	Not Available	1	Not Available
62	69	62	90	81	90	81
ABS thermo moulded	ABS thermo moulded	ABS thermo moulded	ABS thermo moulded	ABS thermo moulded	ABS thermo moulded	ABS thermo moulded
Coated Steel White	Coated Steel White	Coated Steel White	Coated Steel White	Coated Steel White	Coated Steel White	Coated Steel White
ST	ST	ST	ST	ST	ST	ST
45mm	45mm	45mm	45mm	45mm	45mm	45mm
4	4	4	5	5	5	5
√(7)	√(7)	√(7)	√(9)	√(9)	√(9)	√(9)
√(7)	√(7)	√(7)	√(9)	√(9)	√(9)	√(9)
√(7)	√(7)	√(7)	√(9)	√(9)	√(9)	√(9)
√	√	√	√	√	√	√
98	98	98	126	126	126	126
ST	ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST	ST
SAFETY CONTROL, DISASTER RECOVERY, key alarm test)						
√	√	√	√	√	√	√
ST	ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST	ST
√	√	√	√	√	√	√
ST	√	√	ST	ST	√	√
√	√	√	√	√	√	√
√	√	√	√	√	√	√
√	√	√	√	√	√	√
√	√	√	√	√	√	√
√	√	√	√	√	√	√
√	√	√	√	√	√	√
√	√	√	√	√	√	√
√	√	√	√	√	√	√
√	√	√	√	√	√	√
√	√	√	√	√	√	√
√	√	√	√	√	√	√

BloodLine

Blood Bank Refrigerators Medical Project

(*) KBBR-KBPR

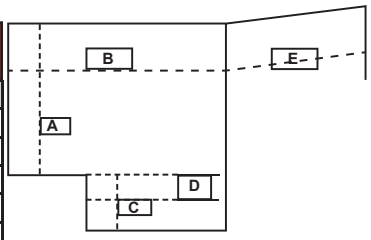
Model	A	B	C	D	E
180	47	46	22	33	52
310	117	44	23	26	52
400	141	44	23	28	52
600	144	58	23	40	68

Internal measures in cm

Model	V1	V2	Internal Load Capacity
180	112	37	149
310	267	31	298
400	322	34	356
600	567	62	629

Capacity in litres

BLOOD BANK MEDICAL PROJECT KBBR/KBPR Medical Device 2007/47 CE				
MODEL KBBR/KBPR	KBBR 600V-AC	KBBR 600C-AC	KBPR 600V-AC	KBPR 600C-AC
External dimensions (WxDxH) (**)	cm78x75x205	cm78x75x205	cm78x75x205	cm78x75x205
Internal dimensions (WxDxH) (*)	cm(*)	cm(*)	cm(*)	cm(*)
Set Point	+4°C/+5°C	+4°C/+5°C	+4°C/+5°C	+4°C/+5°C
Working range	+0°C+10°C	+0°C+10°C	+0°C+10°C	+0°C+10°C
Capacity (litres)	630	630	630	630
N° Glass door small emittance	1	Not Available	1	Not Available
Weight Kg	115	100	115	100
Internal surfaces standard	ABS thermo moulded	ABS thermo moulded	ABS thermo moulded	ABS thermo moulded
External surfaces standard	Coated Steel White	Coated Steel White	Coated Steel White	Coated Steel White
Antibacterial internal surface	ST	ST	ST	ST
Insulation thickness	45mm	45mm	45mm	45mm
STANDARD				
Shelves (SHE)	5	5	5	5
N.° inox drawers (DRAX)	√(9)	√(9)	√(9)	√(9)
N.° aluminium drawers (DRAL)	√(9)	√(9)	√(9)	√(9)
N.° plastic drawers (DRAP)	√(9)	√(9)	√(9)	√(9)
Plastic dividing parts	√	√	√	√
N.° bags 450 ml	216	216	216	216
Key Lock	ST	ST	ST	ST
Controller NIA (*)	ST	ST	ST	ST
(*) Controller NIA (display LCD, Smart defrost, HT, LT, BLACK OUT, failure list, door open, switching on/off password, alarm memory, alarm test, SAFETY CONTROL, DISASTER RECOVERY, key alarm test)				
Supply failure alarm	√	√	√	√
NTC Probe	ST	ST	ST	ST
RS485 (Serial Access)	ST	ST	ST	ST
Automatic Defrosting without energy comsumption	ST	ST	ST	ST
Automatic evaporation of the condensation water	ST	ST	ST	ST
AVAILABLE ACCESSORIES				
Web NIA Server (Rete Ethernet + GSM)	√	√	√	√
Temperature recorder	ST	ST	√	√
Printer (Strip Chart)	√	√	√	√
Kit Data Pocket (IR transceiver, IR receiver for PC, ColdMaster)	√	√	√	√
Data logger wireless+software/hardware (temperature management Spy KW)	√	√	√	√
PT100 Probe	√	√	√	√
2 ch PT100 (control probe, alarm probe)	√	√	√	√
Product simulation probe	√	√	√	√
Additional PT100 probe (free contacts for external data management system: data logger wireless etc.)	√	√	√	√
Kit wheels	√	√	√	√
Internal - External hole	√	√	√	√
IQ/QQ/ecc.	√	√	√	√
GI Green Ice very low energy consumpation	√	√	√	√



The internal volume can be calculated by adding both capacities:
AxExB + DxExC
V1 + V2

PROJECT GREEN ICE

GREEN ICE cuts down the electrical energy consumption

GREEN ICE means carbon dioxide reduction and fights the earth global warming

GREEN ICE is hi-tech: allow high energy savings, money and running costs

GREEN ICE is an added value in the cold chain of the bio-medical laboratory: conveys positive values to all the health workers

GREEN ICE plus energy saving:

LED LIGHTS: is the light of the future, with reduced consumptions until 70% as to the fluorescent lamps; has a longer life , need less service ; its disposal is eco-friendly

HIGH EFFICENCY FANS: assures energy saving until 40% as to traditional solutions ; with optimum performances

GLASS DOOR WITH LOW EMISSIVITY: increases the thickness insulation efficiency (lower heat losses) without to change the products visibility and improving the energy saving (lower consumptions)

SUPER – INSULATION STRUCTURE: in many freezers and refrigerators, KW applies a super insulation, or realizes a mix with vacuum insulation panels (V.I.P.) , cutting down of 15-20% the energy consumption of the equipment , as to the traditional solutions

GREEN ICE is a KW mark .

KW is working, non – stop, to apply, on all the equipment, further solutions for very low environmental impact .

√	OPTIONAL
ST	STANDARD
NO	Not Available

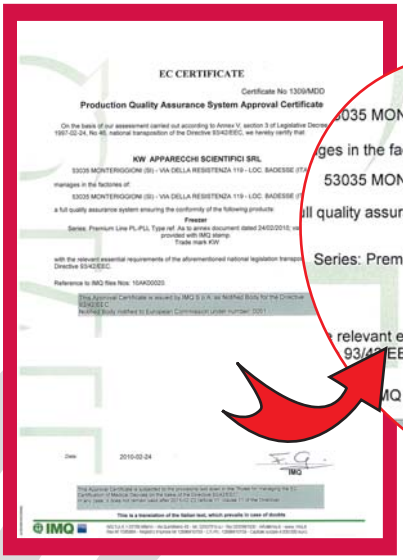
V= Glass Door

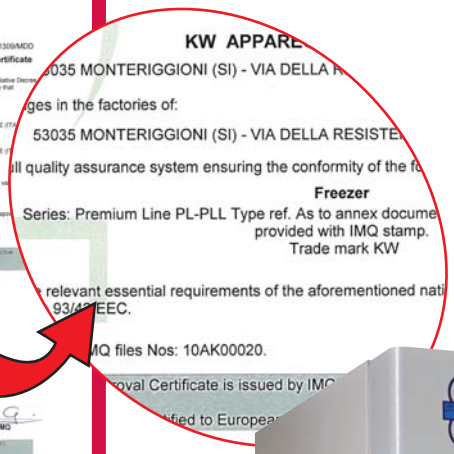
C= Insulated Door

(**) = EXTERNAL DIMENSIONS INCLUDE THE SPACE FOR TEMPERATURE RACORDER ABOUT 20 CM. (*) = INTERNAL DIMENSIONS

BloodLine

Plasma Freezers -40°C -86°C PL




KW APPARE
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53035 MONTERIGGIONI (SI) - VIA DELLA RESISTE
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Freezer
Series: Premium Line PL-PLL Type ref. As to annex docume
provided with IMQ stamp.
Trade mark KW
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93/42/EEC.
MQ files Nos: 10AK00020.
oval Certificate is issued by IMQ
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MEDICAL DEVICE

DIRECTIVE 2007/47 CE

USB

Green ICE

K54EPL/PLL
Plasma Freezer (-40°C/-86°C)

K60PL/PLL

BloodLine

Plasma Freezers -40°C -86°C PL

KW -80°C PLASMA FREEZER SERIES PL MEDICAL DEVICE DIRECTIVE 2007/47 CE					
VERTICAL MODELS PL -80°C	KUB75 V.I.P.	K57	K56	K568	K58
External dimensions (WxDxH)	cm97x58x78	cm80x79x132	cm80x79x188	cm85x78x199	cm96x80x188
Internal dimensions (WxDxH)	cm42x35x58	cm50x45x54	cm50x45x111	cm60x45x128	cm70x46x111
Set Point	-80°C	-80°C	-80°C	-80°C	-80°C
Working range	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C
Capacity (litres)	85	125	250	351	354
Pre painted steel closed doors	1	1	1	1	1
Shelves/inner doors	2/1	2/2	4/4	4/4	4/4
Weight Kg	100	200	260	260	290
Internal surfaces standard	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet
External surfaces standard	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel
Insulation thickness	130mm	150mm	140mm	140mm	140mm
Key Lock	ST	ST	ST	ST	ST
4 wheels (2 with brake)	ST	ST	ST	ST	ST
(*) Controller NIA (display LCD, Smart defrost, HT, LT, BLACK OUT, failure list, door open, switching on/off password, alarm memory, alarm test, SAFETY CONTROL, DISASTER RECOVERY, key alarm test)					
Controller NIA (*)	ST	ST	ST	ST	ST
N°2 PT100 probe(-40°C/-130°C Class A)	ST	ST	ST	ST	ST
RS485 (Serial Access)	ST	ST	ST	ST	ST
USB PORT+Software	ST	ST	ST	ST	ST
AVAILABLE ACCESSORIES					
Internal AISI 316 surfaces	√	√	√	√	√
External AISI 304 o AISI 316 surfaces	√	√	√	√	√
V.I.P. (vacuum insulation panel)	ST	√	√	√	√
N.° inox drawers H100 mm	NO	(√)4	(√)8	(√)8	(√)8
N.° inox drawers H200 mm	NO	(√)2	(√)4	(√)4	(√)4
Rack/Cak/COS	√	√	√	√	√
Additional shelves	√	√	√	√	√
Kit back up CO2 (24Vac/50Hz)	√	√	√	√	√
Kit back up LN2 (24Vac/50Hz)	√	√	√	√	√
Emergency plant CO2 (12Vac/25Hz) with temperature indipendent regulator	√	√	√	√	√
Opening door by transponder personal key		√	√	√	√
Temperature recorder	√	√	√	√	√
Printer (Strip Chart)	√	√	√	√	√
Web NIA Server (Rete Ethernet + GSM)	√	√	√	√	√
Additional PT100 probe (free contacts for external data management system: data logger wireless etc.)	√	√	√	√	√
Data logger WIFI + software/hardware (temperature management Spy KW)	√	√	√	√	√
Voltage stabilizer ± 35V (±15%)	√	√	√	√	√
IQ/QQ/ecc.	√	√	√	√	√
Water condenser	NO	NO	√	√	√
Internal - external hole	√	√	√	√	√

√	OPTIONAL
ST	STANDARD
NO	Not Available

BloodLine

Plasma Freezers -40°C -86°C PL

KW -80°C PLASMA FREEZER SERIES PL MEDICAL DEVICE DIRECTIVE 2007/47 CE							
K60	K62	K64	K66	K58-2D	K60-2D	K62-2D	K66-2D
cm97x96x184	cm106x90x199	cm106x100x199	cm110x103x199	cm97x80x199	cm97x97x199	cm106x100x199	cm110x103x199
cm70x65x111	cm80x59x128	cm80x69x128	cm85x73x130	cm72x46x109	cm72x65x109	cm82x69x109	cm85x73x130
-80°C	-80°C	-80°C	-80°C	-80°C	-80°C	-80°C	-80°C
-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C
505	604	706	806	354	505	604	704
1	1	1	1	2	2	2	2
4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4
320	330	350	450	290	320	330	450
AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet
Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel
140mm	140mm	140mm	140mm	140mm	140mm	140mm	140mm
ST	ST	ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST	ST	ST
(*) Controller NIA (display LCD, Smart defrost, HT, LT, BLACK OUT, failure list, door open, switching on/off password, alarm memory, alarm test, SAFETY CONTROL, DISASTER RECOVERY, key alarm test)							
ST	ST	ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST	ST	ST
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	ST	√	√	√	ST
(√)8	(√)8	(√)8	(√)8	(√)8	(√)8	(√)8	(√)8
(√)4	(√)4	(√)4	(√)4	(√)4	(√)4	(√)4	(√)4
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
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BloodLine

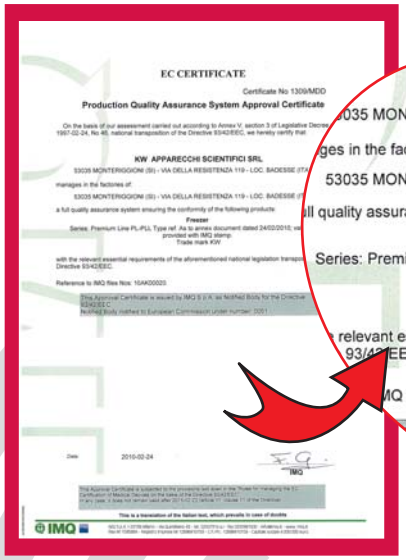
Plasma Freezers -40°C -86°C PL

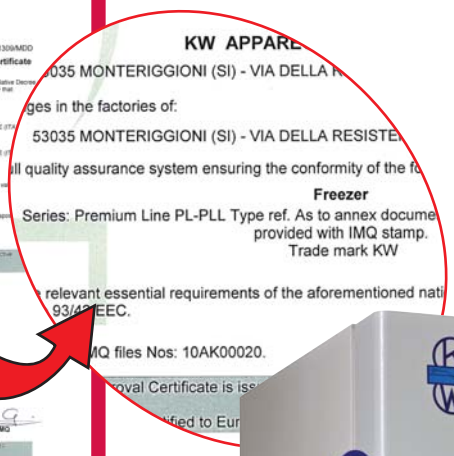
KW -80°C PLASMA FREEZER SERIES PL MEDICAL DEVICE DIRECTIVE 2007/47 CE						
HORIZONTAL MODELS PL -80°C	K52	K52E	K54	K54E	K55	K55E
External dimensions (WxDxH)	cm90x100x124	cm90x100x124	cm150x86x124	cm150x86x124	cm195x88x112	cm256x86x117
Internal dimensions (WxDxH)	cm55x40x50	cm63x48x55	cm115x40x50	cm123x48x55	cm122x52x75	cm180x50x78
Set Point	-80°C	-80°C	-80°C	-80°C	-80°C	-80°C
Working range	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C
Capacity (litres)	110	170	230	330	480	702
Pre painted steel closed doors	1	1	1	1	1	1
Shelves/inner doors	-	-	-	-	-	-
Weight Kg	130	140	290	300	350	440
Internal surfaces standard	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet
External surfaces standard	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel
Insulation thickness	175mm	140mm	175mm	140mm	140mm	140mm
Key Lock	ST	ST	ST	ST	ST	ST
4 wheels (2 with brake)	ST	ST	ST	ST	ST	ST
(*) Controller NIA (display LCD, Smart defrost, HT, LT, BLACK OUT, failure list, door open, switching on/off password, alarm memory, alarm test, SAFETY CONTROL, DISASTER RECOVERY, key alarm test)						
Controller NIA (*)	ST	ST	ST	ST	ST	ST
N°2 PT100 probe(-40°C/-130°C Class A)	ST	ST	ST	ST	ST	ST
RS485 (Serial Access)	ST	ST	ST	ST	ST	ST
USB PORT+Software	ST	ST	ST	ST	ST	ST
AVAILABLE ACCESSORIES						
Internal AISI 316 surfaces	√	√	√	√	√	√
External AISI 304 o AISI 316 surfaces	√	√	√	√	√	√
Rack/Cak/COS	√	√	√	√	√	√
Kit back up CO2 (24Vac/50Hz)	√	√	√	√	√	√
Kit back up LN2 (24Vac/50Hz)	√	√	√	√	√	√
Emergency plant CO2 (12Vac/25Hz) with temperature indipendent regulator	√	√	√	√	√	√
Opening door by transponder personal key	√	√	√	√	√	√
Temperature recorder	√	√	√	√	√	√
Printer (Strip Chart)	√	√	√	√	√	√
Web NIA Server (Rete Ethernet + GSM)	√	√	√	√	√	√
Additional PT100 probe (free contacts for external data management system: data logger wireless etc.)	√	√	√	√	√	√
Data logger WIFI +software/hardware (temperature management Spy KW)	√	√	√	√	√	√
Voltage stabilizer ± 35V (±15%)	√	√	√	√	√	√
IQ/QQ/ecc.	√	√	√	√	√	√
Water condenser	NO	NO	√	√	√	√
Internal - external hole	√	√	√	√	√	√

√	OPTIONAL
ST	STANDARD
NO	Not Available

BloodLine

Plasma Freezers -30°C -50°C PLL

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MEDICAL DEVICE

DIRECTIVE 2007/47 CE

USB

Green ICE

K54EPL/PLL
Plasma Freezer (-30°C/-50°C)

K60PL/PLL

BloodLine

Plasma Freezers -30°C -50°C PLL

KW -40°C PLASMA FREEZER SERIES PLL MEDICAL DEVICE DIRECTIVE 2007/47 CE					
VERTICAL MODELS PLI -40°C	KUB4075	K4057	K4056	K40568	K4058
External dimensions (WxDxH)	cm97x58x78	cm80x79x132	cm80x79x188	cm85x78x199	cm96x80x188
Internal dimensions (WxDxH)	cm42x35x58	cm50x45x54	cm50x45x111	cm60x45x128	cm70x46x111
Set Point	-40°C	-40°C	-40°C	-40°C	-40°C
Working range	-30°C -50°C	-30°C -50°C	-30°C -50°C	-30°C -50°C	-30°C -50°C
Capacity (litres)	85	125	250	351	354
Pre painted steel closed doors	1	1	1	1	1
Shelves/inner doors	2/1	2/2	4/4	4/4	4/4
Weight Kg	100	200	260	260	290
Internal surfaces standard	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet
External surfaces standard	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel
Insulation thickness	130mm	150mm	140mm	140mm	140mm
Key Lock	ST	ST	ST	ST	ST
4 wheels (2 with brake)	ST	ST	ST	ST	ST
(*) Controller NIA (display LCD, Smart defrost, HT, LT, BLACK OUT, failure list, door open, switching on/off password, alarm memory, alarm test, SAFETY CONTROL, DISASTER RECOVERY, key alarm test)					
Controller NIA (*)	ST	ST	ST	ST	ST
N°2 PT100 probe(-40°C/-130°C Class A)	ST	ST	ST	ST	ST
RS485 (Serial Access)	ST	ST	ST	ST	ST
USB PORT+Software	ST	ST	ST	ST	ST
AVAILABLE ACCESSORIES					
Internal AISI 316 surfaces	√	√	√	√	√
External AISI 304 o AISI 316 surfaces	√	√	√	√	√
V.I.P. (vacuum insulation panel)	ST	√	√	√	√
N.° inox drawers H100 mm	NO	(√)4	(√)8	(√)8	(√)8
N.° inox drawers H200 mm	NO	(√)2	(√)4	(√)4	(√)4
Rack/Cak/COS	√	√	√	√	√
Additional shelves	√	√	√	√	√
Kit back up CO2 (24Vac/50Hz)	√	√	√	√	√
Kit back up LN2 (24Vac/50Hz)	√	√	√	√	√
Emergency plant CO2 (12Vac/25Hz) with temperature indipendent regulator	√	√	√	√	√
Opening door by transponder personal key	√	√	√	√	√
Temperature recorder	√	√	√	√	√
Printer (Strip Chart)	√	√	√	√	√
Web NIA Server (Rete Ethernet + GSM)	√	√	√	√	√
Additional PT100 probe (free contacts for external data management system: data logger wireless etc.)	√	√	√	√	√
Data logger WIFI+software/hardware (temperature management Spy KW)	√	√	√	√	√
Voltage stabilizer ± 35V (±15%)	√	√	√	√	√
IQ/QQ/ecc.	√	√	√	√	√
Water condenser	NO	NO	√	√	√
Internal - external hole	√	√	√	√	√

√	OPTIONAL
ST	STANDARD
NO	Not Available

BloodLine

Plasma Freezers -30°C -50°C PLL

KW -40°C PLASMA FREEZER SERIES PLL MEDICAL DEVICE DIRECTIVE 2007/47 CE							
K4060	K4062	K4064	K4066	K4058-2D	K4060-2D	K4062-2D	K4066-2D
cm97x96x184	cm106x90x199	cm106x100x199	cm110x103x199	cm97x80x199	cm97x97x199	cm106x100x199	cm110x103x199
cm70x65x111	cm80x59x128	cm80x69x128	cm85x73x130	cm72x46x109	cm72x65x109	cm82x69x109	cm85x73x130
-40°C	-40°C	-40°C	-40°C	-40°C	-40°C	-40°C	-40°C
-30°C -50°C	-30°C -50°C	-30°C -50°C	-30°C -50°C	-30°C -50°C	-30°C -50°C	-30°C -50°C	-30°C -50°C
505	604	706	806	354	505	604	704
1	1	1	1	2	2	2	2
4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4
300	300	310	400	290	320	330	450
AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet
Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel
140mm	140mm	140mm	140mm	140mm	140mm	140mm	140mm
ST	ST	ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST	ST	ST
(*) Controller NIA (display LCD, Smart defrost, HT, LT, BLACK OUT, failure list, door open, switching on/off password, alarm memory, alarm test, SAFETY CONTROL, DISASTER RECOVERY, key alarm test)							
ST	ST	ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST	ST	ST
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
(√)8	(√)8	(√)8	(√)8	(√)8	(√)8	(√)8	(√)8
(√)4	(√)4	(√)4	(√)4	(√)4	(√)4	(√)4	(√)4
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
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BloodLine

Plasma Freezers -30°C -50°C PLL

KW -40°C PLASMA FREEZER SERIES PLL MEDICAL DEVICE DIRECTIVE 2007/47 CE						
HORIZONTAL MODELS PLL-40°C	K4052	K4052E	K4054	K4054E	K4055	K4055E
External dimensions (WxDxH)	cm90x75x124	cm90x75x124	cm150x75x124	cm150x75x124	cm195x88x112	cm256x86x117
Internal dimensions (WxDxH)	cm50x40x50	cm63x48x55	cm115x40x50	cm124x49x55	cm122x52x75	cm180x50x78
Set Point	-40°C	-40°C	-40°C	-40°C	-40°C	-40°C
Working range	-30°C -50°C	-30°C -50°C	-30°C -50°C	-30°C -50°C	-30°C -50°C	-30°C -50°C
Capacity (litres)	110	170	230	330	480	702
Pre painted steel closed doors	1	1	1	1	1	1
Shelves/inner doors	-	-	-	-	-	-
Weight Kg	130	140	290	300	350	440
Internal surfaces standard	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet
External surfaces standard	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel
Insulation thickness	175mm	140mm	175mm	140mm	140mm	140mm
Key Lock	ST	ST	ST	ST	ST	ST
4 wheels (2 with brake)	ST	ST	ST	ST	ST	ST
(*) Controller NIA (display LCD, Smart defrost, HT, LT, BLACK OUT, failure list, door open, switching on/off password, alarm memory, alarm test, SAFETY CONTROL, DISASTER RECOVERY, key alarm test)						
Controller NIA (*)	ST	ST	ST	ST	ST	ST
N°2 PT100 probe(-40°C/-130°C Class A)	ST	ST	ST	ST	ST	ST
RS485 (Serial Access)	ST	ST	ST	ST	ST	ST
USB PORT+Software	ST	ST	ST	ST	ST	ST
AVAILABLE ACCESSORIES						
Internal AISI 316 surfaces	√	√	√	√	√	√
External AISI 304 o AISI 316 surfaces	√	√	√	√	√	√
Rack/COS	√	√	√	√	√	√
Kit back up CO2 (24Vac/50Hz)	√	√	√	√	√	√
Emergency plant CO2 (12Vac/25Hz) with temperature indipendent regulator	√	√	√	√	√	√
Kit back up LN2 (24Vac/50Hz)	√	√	√	√	√	√
Opening door by transponder personal key	√	√	√	√	√	√
Temperature recorder	√	√	√	√	√	√
Printer (Strip Chart)	√	√	√	√	√	√
Web NIA Server (Rete Ethernet + GSM) Additional PT100 probe	√	√	√	√	√	√
Data logger WIFI+software/hardware (temperature management Spy KW)	√	√	√	√	√	√
Voltage stabilizer ± 35V (±15%)	√	√	√	√	√	√
IQ/QQ/ecc.	√	√	√	√	√	√
Water condenser	NO	NO	NO	√	√	√
Internal - external hole	√	√	√	√	√	√

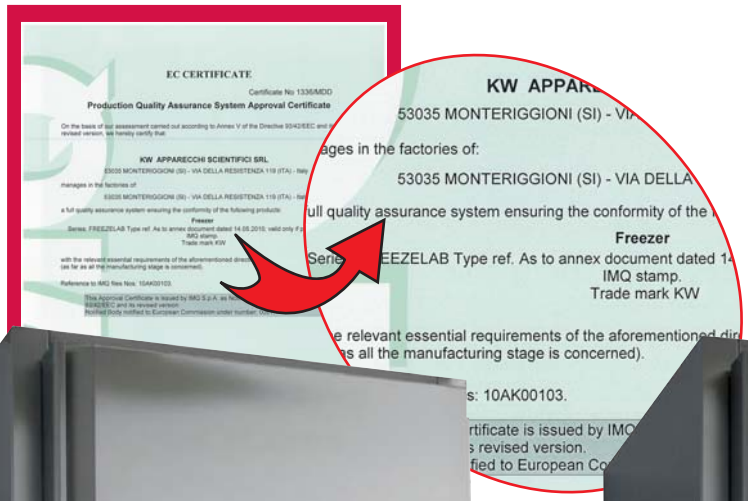
√	OPTIONAL
ST	STANDARD
NO	Not Available

BloodLine

Plasma Freezers -20°C -45°C

MEDICAL DEVICE

DIRECTIVE 2007/47 CE


EC CERTIFICATE
Production Quality Assurance System Approval Certificate
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KBPF 600X PP Plasma freezer

KBPF 600X PP/2D Plasma freezer

BloodLine

Plasma Freezers -20°C -45°C

FREEZELAB-PLASMA-FREEZER DIRECTIVE 2007/47 CE				
Series FREEZELAB	Series ELITE Vertical		Series Frig.KDE Vert.	Series Frig.KDF Vert.
MODELS	KFE 600	KFS 600	KFDE 520	K 220 V
External dimensions (WxDxH)	cm67x87x195	cm67x87x195	cm72x75x191	cm60x63x188
Internal dimensions (WxDxH)	cm55x75x145	cm55x75x145	cm59x68x140	cm51x57x144
Set Point	-25°C	-30°C	-30°C	-40°C
Working range	-18°C/-25°C	-20°C/-30°C	-18°C/-30°C	-20°C/-45°C
Capacity (litres)	600	600	520	220
Pre painted steel closed doors	1	1	1	1
Shelves/baskets	5/0	5/0	7 /14	6/6
Weight Kg	140	150	103	90
Internal surfaces standard	Coated steel white	Coated steel white	ABS thermo moulded	ABS thermo moulded
External surfaces standard	Coated steel white	Coated steel white	Coated steel white	Coated steel white
Insulation thickness	60mm	60mm	80mm	80mm
Key Lock	ST	ST	ST	ST
Small rollers/wheels + stabilizing feets	ST	ST	ST	ST
(*) Controller NIA (display LCD, Smart defrost, HT, LT, BLACK OUT, failure list, door open, switching on/off password, alarm memory, alarm test,				
Controller NIA (*)	ST	ST	ST	ST
NTC probe	ST	ST	ST	ST
RS485 (Serial Access)	ST	ST	ST	ST
None defrosting	ST	ST	ST	ST
AVAILABLE ACCESSORIES				
External surface inox	√	√	NO	NO
Internal surface inox	√	√	NO	NO
N.° aluminium drawers (DRAL)	√(7)	√(7)	NO	NO
N.° plastic drawers (DRAP)	NO	NO	ST	ST
Additional shelves	√	√	NO	NO
Opening door by transponder personal key	√	√	NO	NO
Temperature recorder	√	√	√	√
Web NIA Server (Rete Ethernet + GSM)	√	√	√	√
Printer (Strip Chart)	√	√	√	√
PT100 Probe (A class)	√	√	√	√
2 ch PT100 (control probe, alarm probe)	√	√	√	√
Kit Data Pocket (IR transceiver, IR receiver for PC, ColdMaster)	√	√	√	√
Additional PT100 probe (free contacts for external data management system)	√	√	√	√
Data logger wireless+software/hardware (temperature management Spy KW)	√	√	√	√
IQ/QQ/ecc.	√	√	√	√
SPLIT	NO	NO	NO	NO
Internal - external hole	√	√	√	√
Voltage stabilizer ± 35V (±15%)	NO	NO	NO	NO
Water condenser	NO	NO	NO	NO

√	OPTIONAL
ST	STANDARD
NO	Not Available

BloodLine

Plasma Freezers -20°C -45°C

FREEZELAB-PLASMA-FREEZER DIRECTIVE 2007/47 CE					
Series KBPF Vertical		Series KBPF-PP Vertical		Series Frig.KFCE Horizontal	
KFS 600S	KFS 600S 2D	KBPF 600 PP	KBPF 600 PP 2D	KFCE 460	K 460C
cm76x95x210	cm76x95x210	cm76x95x210	cm76x95x210	cm165x76x92	cm165x76x92
cm57x73x151	cm57x73x151	cm57x73x151	cm57x73x151	cm144x51x67	cm144x51x67
-30°C	-30°C	-40°C	-40°C	-30°C	-40°C
-20°C/-30°C	-20°C/-30°C	-30°C/-45°C	-30°C/-45°C	-18°C/-30°C	-20°C/-45°C
600	600	600	600	460	441
1	2	1	2	1	1
5 o piùor more	5 or more	5 or more	5 or more	5 cbaskets	5 baskets
160	170	190	200	90	90
AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	Laminated aluminum	Laminated aluminum
Coated steel white	Coated steel white	Coated steel white	Coated steel white	Coated steel white	Coated steel white
90mm	90mm	90mm	90mm	100mm	100mm
ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST
SAFETY CONTROL, DISASTER RECOVERY, key alarm test)					
ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	NO	NO
√	√	√	√	NO	NO
√(7)	√(7)	√(7)	√(7)	NO	NO
NO	NO	NO	NO	NO	NO
√	√	√	√	NO	NO
√	√	√	√	NO	NO
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√	√	√	√	√	√
√	√	√	√	√	√
√	√	√	√	√	√
NO	NO	√	√	NO	√
√	√	√	√	√	√
NO	NO	√	√	NO	NO
NO	NO	√	√	NO	NO

BloodLine

Certified Medical Device Class IIA

Ultra Low temperature freezers
HPL LINE
(High Performance Line)

(TT) TOUCH TECNOLOGY

KW is always very innovative and gets inspiration by the news from informatics, electronics and thermodynamics.
KW has thought a controller with a technology based on micro processor ARM9, Dual Core, the same processor applied in smartphones. It's name is **i-KW**. I-KW works with operative system Linux and it's a true on–board computer. The new controller has a graphic interface, done with a touch screen **TFT DISPLAY.** KW slogan is: ***let's put an iPad in our apparatus!***
This controller, not only is equipped with a more powerful processor and with much capacity of memory RAM, if compared to the previous models, it has an user interface so direct, that anyone will find it really user-friendly.

CONNECTIVITY, TRACEABILITY AND TOTAL SAFETY

Guarantying the maximum connectivity and traceability, i-KW is able to satisfy the requirements of the pharmaceutical industry and health laboratories, completely. The ultra low temperature freezers HPL, with the new smart controller i-KW, **can have a full connectivity with the laboratory environmental, by means of: slot USB, slot SIM, Wi-Fi, Ethernet wired, and RS485 port with ModBus protocol.**

Above all, the Wi-Fi connection will make the HPL freezer visible in the LAN of the hospital or of the industrial laboratory. **From a PC workstation, connected in the same network as the freezer, through the browser, you can connect with the refrigeration unit by typing the IP address of the same. Or, from any Internet terminal in the world will be able to connect to the refrigeration unit accessing the static IP address of the company, whose network is connected in the freezer, of course having the login credentials, which may be granted by the administrator corporate network.**
The controller also warrants a full traceability, since the system continuously records, at high frequency, the functional data, bar codes, or other forms of coding, combining them with the freezing or cryo preservation process, etc. The user, without needing any specific SW, will be able to transfer the data to PC and/or to LAN in a very friendly way thanks to the standards which are developed in compliance with Windows. The smart controller i-KW has been designed to guarantee an integrated safety about all the functions, through the regulation and the management of the refrigeration power. The data recording complies with the most evolved standards, like GMP, JACIE, FACT, and so on. **There is also the availability of a temperature – time graphic, with no need to install a specific recorder.**

BloodLine

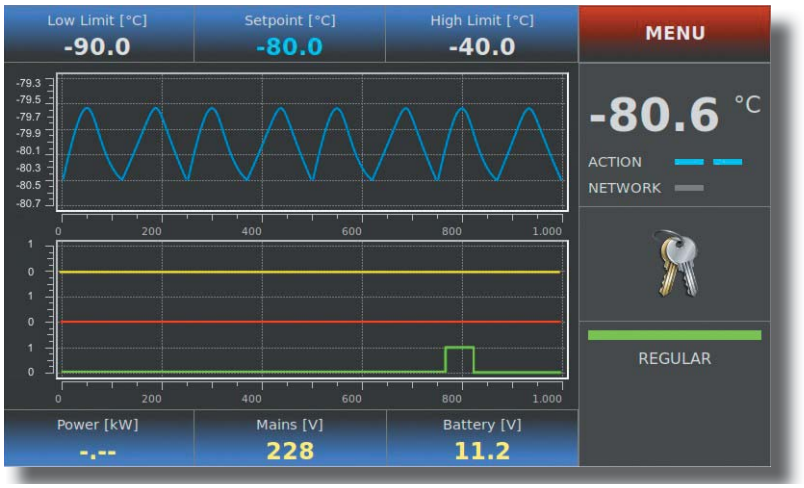
MEDICAL DEVICE

THE INNOVATION OF HUMAN INTERFACE

A true challenge to the common sense for dimensions, structure and possible information. I-KW is the new reference for the user interface and for the connectivity attached to the control of the temperature freezers, where a simple, intuitive and nice to see interface is combined with a sophisticated management of the refrigeration unit.

- Recording of the functional variables on SD card, in real time
- Menu sensitive to the fingering (touch) with many windows and with temperature graphics
- USB interface on the front panel to download the temperature recording and updating (SW-FW)
- Possibility of door opening, in safety (password) through touch button or transponder
- Italian, English, French, Spanish, German languages available

Badge KW



Instant termperature and alarm graphs and door opening

THE ACCESS CONTROL AND THE AIDED MAINTENANCE

The HPL freezers, equipped with the new i-KW controller, have a controlled access: it comes as standard the possibility to use an **electronic key** (alphanumerical code customized by the user) to put together with an electrical lock for a controlled door opening, or, as optional equipment, to use a **badge or transponder (or finger pass, with the finger print storage)**.
The new i-KW controller guarantees high use simplicity and an easy maintenance. The user will be able to arrange many tools which will teach him how to use them.

Think to the possibility to have a user guide on display and to scroll it as if it was a smart phone; and therefore to enjoy immediately an user manual, a start up sequence, or video files, which show the maintenance activities and so on.
Through the possibility for the manufacturer or the service engineer to connect by an IP address, and by a sequence of passwords (safety and traceability) to ask questions to the freezer status, or to modify the parameters, the freezer management can also happen from remote, with low costs and in very short time, with undoubted advantages for the failures preventing.
It will be possible to activate a telecare, with the mailing of instructions and recommendations on display, activating GSM function, by the slot for SIM.

BloodLine

Ultra Low temperature freezers
HPL LINE
(High Performance Line)

The new controller assures safer procedures, automatic recording of the data and shorter working time for the technician.
In fact it obtains the maximum saving for the procedures of freezing, storage, by the automatic writing of the introduced items, by the automatic recording of materials and thermal cycle, and their association. In this way it obtains to amend many errors and many not conformities of the laboratory processes, and in last analysis it gives a sensible saving of the indirect costs.

The control and recording of all the functional parameters, by the computer memory, guarantees a very high operative efficiency, allowing the measurements of the energy consumption and the actuation of the parameters useful for COP rising together with Green Ice project.
The user can display also the recording of electrical consumption.
New functions and an arrangement to future updating

INTERACTIVE ENERGY SAVING

About energy saving, the smart controller i-KW has new functions:

ECO MODE
allows raising the temperature set during the night hours with a pre-definite value (settable by the user or by the manufacturer)

ENERGY SAVING
allows, when the percentage of the compressor use reaches a pre definite value, to raise the temperature set point, temporarily and automatically, with a pre definite value (settable by the user or by the manufacturer). The restore, at the pre definite conditions, happens automatically.
These two new functions allow to integrate themselves to those offered by NIA system and to aid the energy saving and the reduction of the global warming, with a smaller not direct CO2 emission in the atmosphere.
The energy saving is at least -15%, in comparison with a standard ultra low freezer, only through Night Mode and Eco Mode.
Besides, the new controller is equipped to accept future updating easily and at low costs, so it'll be able to adapt itself to the new technological innovations and to response to the raising requirements from the rules and the directives in pharmaceutical and health field.

Smart controller i-KW is the last stage of the art for the control system of the ultra low temperature freezers.

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Ultra Low temperature freezers
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(High Performance Line)

User panel

STRUCTURE: the external cabinet is a plasticized, zinc-plated (or enamelled) steel sheet with rounded edges for maximum ergonomics; Internal casing in AISI 304 stainless steel (or AISI 316 upon request) with rounded angles for easy cleaning; n.4 insulated internal counter doors (n.5 upon request) for upright models; the handle has an ergonomic design and key lock; pivoting wheels to facilitate transportation and placement inside the laboratory; not heated pressure-compensation valve
to facilitate the operation of opening the door, Insulation is in CFC- and HCFC-free polyurethane resin foamed on site, with a density of 40 Kg. /m3 and with an average thickness of 140 mm or more. **(It's available V.I.P. solution).**

KUB75 and K66 models have – standard - polyurethane resin foamed on site and embedded V.I.P. panels

Gaskets: triple silicone rubber seal, welded joints, heated by the refrigerant itself and with virtually unlimited duration.

REFRIGERATION SYSTEM AT -86°C: the refrigeration system is fully sealed; it uses a cascade circuit with innovative components and fluids to obtain, together, maximum cooling reliability and performance; 2 silent, airtight compressors (value Leq dB (A) <55) with a high refrigeration capacity; the refrigerants are nontoxic, non-flammable, non-explosive and environmentally friendly. the condensation is obtained with forced air circulation; on request, water condenser.
The freezers at -40°C have the same construction characteristics as those of the HPL series at -85°C, with the exception of the second system in cascade.

Voltage stabilizer: 4,000-VA voltage regulation, capable of compensating the fluctuations of the utility power supply (± 15%), protecting the compressors and guaranteeing a long useful life.

Customized temperature limits

COMPLETELY CUSTOMIZED

SAFETY - Customized password protection

BloodLine

Certified Medical Device Class IIA

Ultra Low temperature freezers
HPL LINE
(High Performance Line)

Display to set and to read the temperature:

i–KW video – graphic interface is a color touch screen display 7" TFT; micro processor ARM9 technology , the same processor used in the smart phones, which functions with Linux operative system; menu sensitive to the fingering with many windows and with temperature graphics; system available in 5 languages: Italian, English, German, French, Spanish.

- Controller startup and shutdown: access protected by electronic key with password

SD

USB B

SIM GSM

ETHERNET

Display	TFT Touch screen 7.0" wide
Power supply	from Power Board
Dimensions	197x122x50 mm
Front ports	USB - Slot per SIM Card e SD Card
Ports	Ethernet
Slot	for modem GSM
CPU	Atmel® at91 sam9261 256 Mb flash Operating System Linux 2.6.33

CONTROL SYSTEM:

control, recording, supervision, full traceability of all the parameters and the events, full connectivity to the environmental, very high safety about the operations and the accesses.

2-ch monitoring kit with two independent RTD Pt 100 Ω (class A) sensors; one for the regulation and one for the temperature alarm and for automatic recording of the temperature and the alarms; recording in real time of all the functional variables on SD card and on USB port; this last part on the front panel to download data of thermal recording and for updating; registration in SQL format for easy reading by dedicated software **KW80CRC TRACER**; **Pb or Ni-MH backup battery; and battery recharge circuit.**

- Set point and alarm limits change:
controlled change through an electronic key, with password against violations, accidental handlings, and for the best traceability.

- Access to the menu, with sensible data and parameters:
controlled access to SW parameters, by electronic key, for the maximum security and in compliance with laboratory rules and standard.

- All data are continously recorded on SD card and on USB Port (software Tracer).

BloodLine

Ultra Low temperature freezers
HPL LINE
(High Performance Line)

ALARMS:
temperature alarm system fully independent with the regulation control; **reading of alarm probe by 2nd micro processor on the electronic board:** visual and acoustic alarm for power failure, door opening, high condenser pressure, battery alarm, damaged probe/s, compressors time, high temperature condenser, clogged condenser; for any temperature alarm, automatic recording (high T, low T) black out, critical alarm temperature, month/day/hour/minute of the alarm start; month/day/hour/minute of the alarm end.

- Door opening:
n° daily openings, n° critical openings, total opening time are all recorded in the memory
List of the monitored failures: damage of T probe, compressor time, dirty condenser, high condenser T, power failure, thermal protection, damaged plant probe

- Safety control:
the freezer continues to run a timed thermo stabilization with compressor on/off times collected before the sensor(s) broke down.

Disaster recovery:
in the event the CPU is destroyed, it allows cycling the functions on the remote unit, with the exception of data visualization, that is, the freezer continues working with average on/off times recorded before the failure.

Info test:
executes functional tests for the biological freezer, with report printing if necessary, without engaging external devices.

Enviromental adaptability: the condenser vents are managed separately by means of a sensor; **condenser fan speed modulation within a band of temperatures.**

Energy saving, activating the under mentioned functions, it's possible save over 15% energy in respect of the freezer with standard controllers – **GREEN ICE SOLUTIONS**; economic management of the consumptions:

Green ICE

- **ECO MODE**:
during the night, when the user procedures and stored product so permit it is possible to raise the set temperature by a predefined value, thereby obtaining important energy savings.

- **ENERGY SAVING**
this reduces the consumption rates of the refrigerating unit as soon as the compressor use percentage reaches a predefined value. In this condition, the operating set point is temporarily and automatically increased by a value preset by the user; resetting takes place automatically at the defined conditions.

BloodLine

Certified Medical Device Class IIA

Ultra Low temperature freezers
HPL LINE
(High Performance Line)

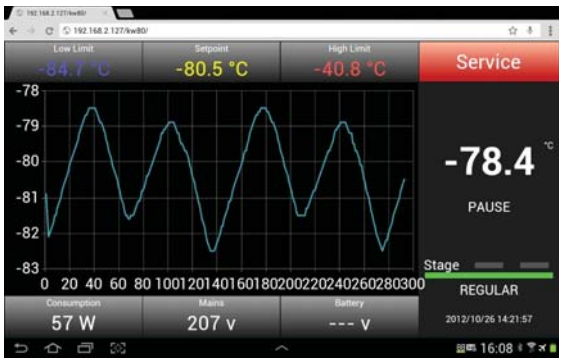
48 Hours!!

Up to 48 hours of temperature data logging on SD CARD in case of energy black out

The control system uses 8 AA Ni-MH rechargeable batteries

GSM: optional, every i-KW80, can have a GSM form, becoming an independent unit, which transmits and receives SMS on own phone number, towards the recorded users;
RS 485 Modbus RTU: is present – standard- a RS485 port with Modbus RTU protocol, oriented to the serial communication of i-KW80 towards systems of supervision, compatible with this protocol;
Bar code reader: optional; for the registered samples equipped with a bar code;
Dry contacts: remote management of the alarm signals;
Human interface: user guide on display; files (also video) with maintenance programs on display; maintenance KW program: informs about periodic operations recommended for the maximum reliability of the freezer and for the minimum energy consumption;
Recording (standard): with data logger function and the possibility to display the temperature - time graphic on display touch screen;

ETHERNET PEER TO PEER WIRED: by a configuration of PPP type, many i-KW80 controllers can be connected in a same network. This configuration allows the supervision per single address IP from PC in the network , by a browser with the display of the HTML pages, pre installed in every single terminal;
WI-FI: through the WI-FI form, optional, the i-KW units can be connected in wireless network, in the environmental where an access point is present (Router WI-FI) or **through router connected directly;**

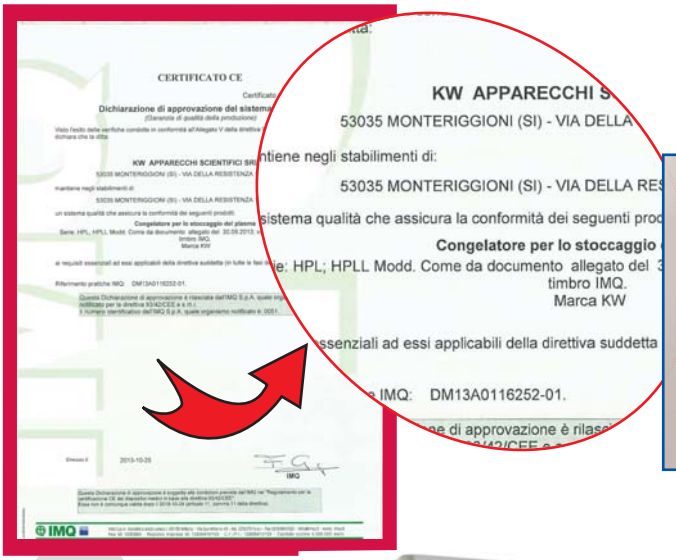


Ethernet or WIFI connectivity

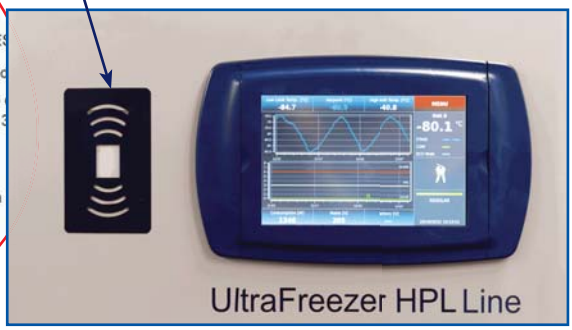
BloodLine

Plasma UltraFreezers -40°C -86°C

HPL LINE


CERTIFICATO CE
KW APPARECCHI S
53035 MONTERIGGIONI (SI) - VIA DELLA
ntiene negli stabilimenti di:
53035 MONTERIGGIONI (SI) - VIA DELLA RES
sistema qualità che assicura la conformità dei seguenti proc
Congelatore per lo stoccaggio
e: HPL; HPLL Modd. Come da documento allegato del
timbro IMQ.
Marca KW
ssenziali ad essi applicabili della direttiva suddetta
IMQ: DM13A0116252-01.
IMQ

RFID reader
for access



7" TFT DISPLAY

K60HPL
UltraFreezer
(-40°C/-85°C)

CERTIFIED MEDICAL DEVICE CLASS IIA

BloodLine

Freezers -40°C -86°C

HPL

(High Performance Line)

KW -80°C PLASMA FREEZER SERIES HPL MEDICAL DEVICE DIRECTIVE 2007/47					
VERTICAL MODELS HPL -80°C	KUB75 V.I.P.	K57	K56	K568	K58
External dimensions (WxDxH)	cm97x58x78	cm80x79x132	cm80x79x188	cm85x78x199	cm96x80x188
Internal dimensions (WxDxH)	cm42x35x58	cm50x45x54	cm50x45x111	cm60x45x128	cm70x46x111
Set Point	-80°C	-80°C	-80°C	-80°C	-80°C
Working range	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C
Capacity (litres)	85	125	250	351	354
Pre painted steel closed doors	1	1	1	1	1
Shelves/inner doors	2/1	2/2	4/4	4/4	4/4
Weight Kg	100	200	260	260	290
Internal surfaces standard	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet
External surfaces standard	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel
Insulation thickness	130mm	150mm	140mm	140mm	140mm
Key Lock	ST	ST	ST	ST	ST
4 wheels (2 with brake)	ST	ST	ST	ST	ST
(*) Controller HPL (display Touch Screen, Smart defrost, HT, LT, BLACK OUT, failure list, door open, switching on/off password, alarm memory, alarm test, SAFETY CONTROL, DISASTER RECOVERY, key alarm test, USB port, WI.FI, Ethernet wired)					
Controller HPL (*)	ST	ST	ST	ST	ST
N°2 PT100 probe(-40°C/-130°C Class A)	ST	ST	ST	ST	ST
RS485, USB Port and SD Card	ST	ST	ST	ST	ST
SW KW TRACER	ST	ST	ST	ST	ST
AVAILABLE ACCESSORIES					
Internal AISI 316 surfaces	√	√	√	√	√
External AISI 304 o AISI 316 surfaces	√	√	√	√	√
V.I.P. (vacuum insulation panel)	ST	√	√	√	√
N.° inox drawers H100 mm	NO	(√)4	(√)8	(√)8	(√)8
N.° inox drawers H200 mm	NO	(√)2	(√)4	(√)4	(√)4
Rack/Cak/COS	√	√	√	√	√
Additional shelves	√	√	√	√	√
Kit back up CO2 (24Vac/50Hz)	√	√	√	√	√
Kit back up LN2 (24Vac/50Hz)	√	√	√	√	√
Opening door by transponder personal key	√	√	√	√	√
Electrical key	√	√	√	√	√
Temperature recorder	√	√	√	√	√
GSM Port	√	√	√	√	√
Emergency plant CO2 (12Vac/25Hz) with temperature indipendent regulator	√	√	√	√	√
Additional PT100 probe (free contacts for external data management system: data logger wireless etc.)	√	√	√	√	√
Data logger WIFI+software/hardware (temperature management Spy KW)	√	√	√	√	√
Voltage stabilizer ± 35V (±15%)	√	√	√	√	√
IQ/QQ/ecc.	√	√	√	√	√
Water condenser	NO	NO	√	√	√
Internal - external hole	√	√	√	√	√

√	OPTIONAL
ST	STANDARD
NO	Not Available

BloodLine

Freezers -40°C -86°C

HPL

(High Performance Line)

KW -80°C PLASMA FREEZER SERIES HPL MEDICAL DEVICE DIRECTIVE 2007/47							
K60	K62	K64	K66	K58-2D	K60-2D	K62-2D	K66-2D
cm97x96x184	cm106x90x199	cm106x100x199	cm110x103x199	cm97x80x199	cm97x97x199	cm106x100x199	cm110x103x199
cm70x65x111	cm80x59x128	cm80x69x128	cm85x73x130	cm72x46x109	cm72x65x109	cm82x69x109	cm85x73x130
-80°C	-80°C	-80°C	-80°C	-80°C	-80°C	-80°C	-80°C
-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C
505	604	706	806	354	505	604	704
1	1	1	1	2	2	2	2
4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4
320	330	350	450	290	320	330	450
AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet
Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel
140mm	140mm	140mm	140mm	140mm	140mm	140mm	140mm
ST	ST	ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST	ST	ST
(*) Controller HPL (display Touch Screen, Smart defrost, HT, LT, BLACK OUT, failure list, door open, switching on/off password, alarm memory, alarm test, SAFETY CONTROL, DISASTER RECOVERY, key alarm test, USB port, WI.FI, Ethernet wired)							
ST	ST	ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST	ST	ST
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	ST	√	√	√	ST
(√)8	(√)8	(√)8	(√)8	(√)8	(√)8	(√)8	(√)8
(√)4	(√)4	(√)4	(√)4	(√)4	(√)4	(√)4	(√)4
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
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√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√

√	OPTIONAL
ST	STANDARD
NO	Not Available

BloodLine

Freezers -40°C -86°C

HPL - Ultra Slim

(High Performance Line)

NEW

K58USHPL

√ **SAVE SPACE IN YOUR LABORATOR**

√ **WORK WITH TOUCH TECNOLOGY:** easy, traceable, with built-in recording system, for easy maintenance at any time, updatable with a simple message

√ **ERGONOMIC AND EASY TO USE AS A LAST GENERATION SMARTPHONE**

√ **SAVE ENERGY** with touch technology HPL through special thermodynamic functions **(GREEN ICE project)**

√ **YOUR FREEZER ALWAYS CONNECTED WITH YOU WHEREVER YOU ARE, ALWAYS IN CONTROL OF YOUR SAMPLES WITH JUST A TOUCH OF PC**

KW Apparecchi Scientifici offers models with **VIP** panels to save energy (up to 20% less - **GREEN ICE project**), while maintaining the same footprint.

VIP PANEL

Now **KW** has developed and will develop new innovative models:

-**ULTRA SLIM** models with Vacuum Insulation Panel Technology: high insulation material with extremely low thermal conductivity and consequently very low thermal transitivity (U-value).
Main components of VIP panels are silica based core and multi layer high-banner film, which keeps vacuum inside the panel on the sufficient level for more than 50 years.

Energy-efficient, quiet running and reliable, **HPL SLIM KW** freezers use space-saving Vacuum Insulation Panel technology to reduce **wall thickness (only 90 mm.) for a significant increase in storage capacity (over 35%), with the same footprint.**

CERTIFIED MEDICAL DEVICE CLASS IIA

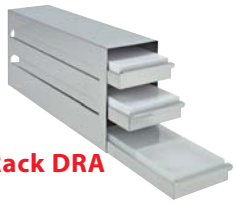
BloodLine

Freezers -40°C -86°C

HPL - Ultra Slim

KW -86°C FREEZER SERIES HPL ULTRA SLIM			
MODELS HPL ULTRA SLIM -80°C	K58US HPL	K62US HPL	K66US HPL
External dimensions (WxDxH)	cm75*x87x190	cm86*x107x190	cm99*x114x199
Internal dimensions (WxDxH)	cm49x60x125	cm60x80x125	cm73x87x134
Set Point	-80°C	-80°C	-80°C
Working range	-40°C -86°C	-40°C -86°C	-40°C -86°C
Capacity (litres)	354	604	806
Pre painted steel closed doors	1	1	1
Shelves/inner doors	4	4	4
Weight Kg	280	320	440
Internal surfaces standard	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet
External surfaces standard	Prepainted steel	Prepainted steel	Prepainted steel
Insulation thickness	90mm	90mm	90mm
Key Lock	ST	ST	ST
4 wheels (2 with brake)	ST	ST	ST
(*) Controller HPL (display Touch Screen, Smart defrost, HT, LT, BLACK OUT, failure list, door open, switching on/off password, alarm memory, alarm test, SAFETY CONTROL, DISASTER RECOVERY, key alarm test, USB port, WI.FI, Ethernet wired)			
Controller HPL (*)	ST	ST	ST
N°2 PT100 probe(-40°C/-130°C Class A)	ST	ST	ST
RS485, USB Port and SD Card	ST	ST	ST
SW KW TRACER	ST	ST	ST
AVAILABLE ACCESSORIES			
Internal AISI 316 surfaces	√	√	√
External AISI 304 o AISI 316 surfaces	√	√	√
V.I.P. (vacuum insulation panel)	ST	ST	ST
Rack/Cak/COS	√	√	√
Additional shelves	√	√	√
Kit back up CO2 (24Vac/50Hz)	√	√	√
Kit back up LN2 (24Vac/50Hz)	√	√	√
Opening door by transponder personal key	√	√	√
Electrical key	√	√	√
Temperature recorder	√	√	√
GSM Port	√	√	√
Emergency plant CO2 (12Vac/25Hz)	√	√	√
Additional PT100 probe	√	√	√
Data logger WIFI+software/hardware (temperature management Spy KW)	√	√	√
Voltage stabilizer ± 35V (±15%)	√	√	√
IQ/QQ/ecc.	√	√	√
Water condenser	NO	NO	NO
Internal - external hole	√	√	√

(*) handle included



Rack DRA

- **K58USHPL** - effective capacity over 360 liters or 2" (h= 5 cm.) boxes n. **240**
- **K62USHPL** - effective capacity over 600 liters or 2" (h= 5 cm.) boxes n. **400**
- **K66USHPL** - effective capacity over 800 liters or 2" (h= 5 cm.) boxes n. **600**

- the boxes are stored in special racks with extraction front to save the cold and exposing the minimum amount of samples to the momentary heating
- **2 standard internal insulated doors to save the cold**
- also available , on request, 3 or 4 internal insulated doors to prevent the exit of cold air (GREEN ICE project)
- 4 standard stainless steel AISI 304 shelves
- Triple seal with silicone rubber with a lifetime guarantee

For the rest, the structure has the same materials and the same technical features as any other ultra low temperature freezer branded KW. And this serie has the same accessories of the other ULT freezers branded KW.

BloodLine

CERTIFIED MEDICAL DEVICE CLASS IIA

Freezers -40°C -86°C

HPL

(High Performance Line)

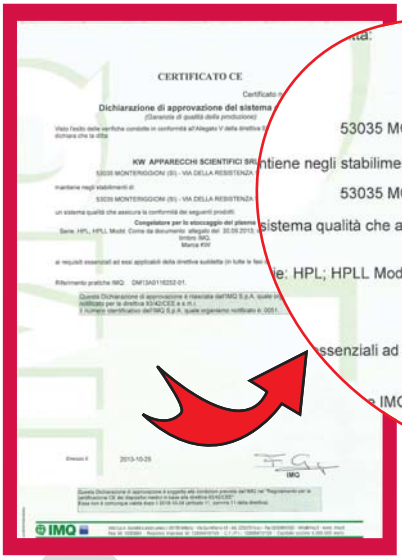
KW -80°C PLASMA FREEZER SERIES HPL MEDICAL DEVICE DIRECTIVE 2007/47							
HORIZONTAL MODELS HPL -80°C	K52	K52E	K54	K54E	K55	K55E	K5578
External dimensions (WxDxH)	cm90x100x124	cm90x100x124	cm150x86x124	cm150x86x124	cm195x88x112	cm256x86x117	cm249x96,5x112
Internal dimensions (WxDxH)	cm55x40x50	cm63x48x55	cm115x40x50	cm123x48x55	cm122x52x75	cm180x50x78	cm176x59,5x75
Set Point	-80°C	-80°C	-80°C	-80°C	-80°C	-80°C	-80°C
Working range	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C
Capacity (litres)	110	170	230	330	480	702	785
Pre painted steel closed doors	1	1	1	1	1	1	1
Shelves/inner doors	-	-	-	-	-	-	-
Weight Kg	130	140	290	300	350	440	440
Internal surfaces standard	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet
External surfaces standard	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel
Insulation thickness	175mm	140mm	175mm	140mm	140mm	140mm	140mm
Key Lock	ST	ST	ST	ST	ST	ST	ST
4 wheels (2 with brake)	ST	ST	ST	ST	ST	ST	ST
(*) Controller HPL (display Touch Screen, Smart defrost, HT, LT, BLACK OUT, failure list, door open, switching on/off password, alarm memory, alarm test, SAFETY CONTROL, DISASTER RECOVERY, key alarm test, USB port, WI.FI, Ethernet wired)							
Controller HPL (*)	ST	ST	ST	ST	ST	ST	ST
N°2 PT100 probe(-40°C/-130°C Class A)	ST	ST	ST	ST	ST	ST	ST
RS485, USB Port and SD Card	ST	ST	ST	ST	ST	ST	ST
SW KW TRACER	ST	ST	ST	ST	ST	ST	ST
AVAILABLE ACCESSORIES							
Internal AISI 316 surfaces	√	√	√	√	√	√	√
External AISI 304 o AISI 316 surfaces	√	√	√	√	√	√	√
Rack/Cak/COS	√	√	√	√	√	√	√
Kit back up CO2 (24Vac/50Hz)	√	√	√	√	√	√	√
Kit back up LN2 (24Vac/50Hz)	√	√	√	√	√	√	√
Emergency plant CO2 (12Vac/25Hz) with temperature indipendent regulator	√	√	√	√	√	√	√
Opening door by transponder personal key	√	√	√	√	√	√	√
Electrical key	√	√	√	√	√	√	√
Temperature recorder	√	√	√	√	√	√	√
GSM port	√	√	√	√	√	√	√
Additional PT100 probe (free contacts for external data management system: data logger wireless etc.)	√	√	√	√	√	√	√
Data logger WIFI+software/hardware (temperature management Spy KW)	√	√	√	√	√	√	√
Voltage stabilizer ± 35V (±15%)	√	√	√	√	√	√	√
IQ/QQ/ecc.	√	√	√	√	√	√	√
Water condenser	NO	NO	√	√	√	√	√
Internal - external hole	√	√	√	√	√	√	√

√	OPTIONAL
ST	STANDARD
NO	Not Available

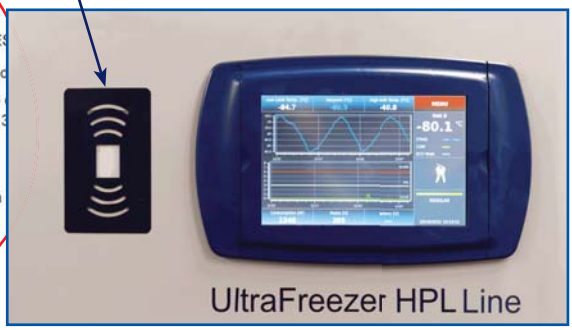
BloodLine

Plasma Freezers -20°C -50°C

HPLL LINE


CERTIFICATO CE
Dichiarazione di approvazione del sistema
KW APPARECCHI S
53035 MONTERIGGIONI (SI) - VIA DELLA
ntiene negli stabilimenti di:
53035 MONTERIGGIONI (SI) - VIA DELLA RES
sistema qualità che assicura la conformità dei seguenti proc
Congelatore per lo stoccaggio
e: HPL; HPLL Modd. Come da documento allegato del
timbro IMQ.
Marca KW
ssenziali ad essi applicabili della direttiva suddetta
IMQ: DM13A0116252-01.
IMQ

RFID reader
for access



7" TFT DISPLAY

K4060HPLL
Freezer
(-20°C/-50°C)

CERTIFIED MEDICAL DEVICE CLASS IIA

BloodLine

Plasma Freezers -20°C -50°C

HPLL

(High Performance Line)

KW -40°C PLASMA FREEZER SERIES HPLL MEDICAL DEVICE DIRECTIVE 2007/47						
VERTICAL MODELS HPLL -40°C	KUB4075	K4057	K4056	K40568	K4058	K4060
External dimensions (WxDxH)	cm97x58x78	cm80x79x132	cm80x79x188	cm85x78x199	cm96x80x188	cm97x96x184
Internal dimensions (WxDxH)	cm42x35x58	cm50x45x54	cm50x45x111	cm60x45x128	cm70x46x111	cm70x65x111
Set Point	-40°C	-40°C	-40°C	-40°C	-40°C	-40°C
Working range	-20°C -50°C	-20°C -50°C	-20°C -50°C	-20°C -50°C	-20°C -50°C	-20°C -50°C
Capacity (litres)	85	125	250	351	354	505
Pre painted steel closed doors	1	1	1	1	1	1
Shelves/inner doors	2/1	2/2	4/4	4/4	4/4	4/4
Weight Kg	100	200	260	260	290	300
Internal surfaces standard	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet
External surfaces standard	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel
Insulation thickness	130mm	150mm	140mm	140mm	140mm	140mm
Key Lock	ST	ST	ST	ST	ST	ST
4 wheels (2 with brake)	ST	ST	ST	ST	ST	ST
(*) Controller HPL (display Touch Screen, Smart defrost, HT, LT, BLACK OUT, failure list, door open, switching on/off password, alarm memory, alarm test, SAFETY CONTROL, DISASTER RECOVERY, key alarm test, USB port, WI.FI, Ethernet wired)						
Controller HPL (*)	ST	ST	ST	ST	ST	ST
N°2 PT100 probe(-40°C/-130°C Class A)	ST	ST	ST	ST	ST	ST
RS485, USB Port and SD Card	ST	ST	ST	ST	ST	ST
SW KW TRACER	ST	ST	ST	ST	ST	ST
AVAILABLE ACCESSORIES						
Internal AISI 316 surfaces	√	√	√	√	√	√
External AISI 304 o AISI 316 surfaces	√	√	√	√	√	√
V.I.P. (vacuum insulation panel)	ST	√	√	√	√	√
N.° inox drawers H100 mm	NO	(√)4	(√)8	(√)8	(√)8	(√)8
N.° inox drawers H200 mm	NO	(√)2	(√)4	(√)4	(√)4	(√)4
Rack/Cak/COS	√	√	√	√	√	√
Additional shelves	√	√	√	√	√	√
Kit back up CO2 (24Vac/50Hz)	√	√	√	√	√	√
Kit back up LN2 (24Vac/50Hz)	√	√	√	√	√	√
Emergency plant CO2 (12Vac/25Hz)	√	√	√	√	√	√
with temperature indipendent regulator						
Opening door by transponder personal key	√	√	√	√	√	√
Electrical key	√	√	√	√	√	√
Temperature recorder	√	√	√	√	√	√
Additional PT100 probe	√	√	√	√	√	√
GSM Port	√	√	√	√	√	√
Data logger WIFI+software/hardware (temperature management Spy KW)	√	√	√	√	√	√
Voltage stabilizer ± 35V (±15%)	√	√	√	√	√	√
IQ/QQ/ecc.	√	√	√	√	√	√
Water condenser	NO	NO	√	√	√	√
Internal - external hole	√	√	√	√	√	√

√	OPTIONAL
ST	STANDARD
NO	Not Available

BloodLine

Plasma Freezers -20°C -50°C

HPLL

(High Performance Line)

KW -40°C PLASMA FREEZER SERIES HPL MEDICAL DEVICE DIRECTIVE 2007/47							
VERTICAL MODELS HPLL -40°C	K4062	K4064	K4066	K4058-2D	K4060-2D	K4062-2D	K4066-2D
External dimensions (WxDxH)	cm106x90x199	cm106x100x199	cm110x103x199	cm97x80x199	cm97x97x199	cm106x100x199	cm110x103x199
Internal dimensions (WxDxH)	cm80x59x128	cm80x69x128	cm85x73x130	cm72x46x109	cm72x65x109	cm82x69x109	cm85x73x130
Set Point	-40°C	-40°C	-40°C	-40°C	-40°C	-40°C	-40°C
Working range	-20°C -50°C	-20°C -50°C	-20°C -50°C	-20°C -50°C	-20°C -50°C	-20°C -50°C	-20°C -50°C
Capacity (litres)	604	706	806	354	505	604	704
Pre painted steel closed doors	1	1	1	2	2	2	2
Shelves/inner doors	4/4	4/4	4/4	4/4	4/4	4/4	4/4
Weight Kg	300	310	400	290	320	330	450
Internal surfaces standard	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet
External surfaces standard	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel
Insulation thickness	140mm	140mm	140mm	140mm	140mm	140mm	140mm
Key Lock	ST	ST	ST	ST	ST	ST	ST
4 wheels (2 with brake)	ST	ST	ST	ST	ST	ST	ST
(*) Controller HPL (display Touch Screen, Smart defrost, HT, LT, BLACK OUT, failure list, door open, switching on/off password, alarm memory, alarm test, SAFETY CONTROL, DISASTER RECOVERY, key alarm test, USB port, WI.FI, Ethernet wired)							
Controller HPL (*)	ST	ST	ST	ST	ST	ST	ST
N°2 PT100 probe	ST	ST	ST	ST	ST	ST	ST
RS485, USB Port and SD Card	ST	ST	ST	ST	ST	ST	ST
SW KW TRACER	ST	ST	ST	ST	ST	ST	ST
AVAILABLE ACCESSORIES							
Internal AISI 316 surfaces	√	√	√	V	√	√	√
External AISI 304 o AISI 316 surfaces	√	√	√	√	√	√	√
V.I.P. (vacuum insulation panel)	√	√	√	√	√	√	√
N.° inox drawers H100 mm	(√)8	(√)8	(√)8	(√)8	(√)8	(√)8	(√)8
N.° inox drawers H200 mm	(√)4	(√)4	(√)4	(√)4	(√)4	(√)4	(√)4
Rack/Cak/COS	√	√	√	√	√	√	√
Additional shelves	√	√	√	√	√	√	√
Kit back up CO2 (24Vac/50Hz)	√	√	√	√	√	√	√
Kit back up LN2 (24Vac/50Hz)	√	√	√	√	√	√	√
Emergency plant CO2 (12Vac/25Hz)	√	√	√	√	√	√	√
with temperature indipendent regulator							
Opening door by transponder personal key	√	√	√	√	√	√	√
Electrical key	√	√	√	√	√	√	√
Temperature recorder	√	√	√	√	√	√	√
Additional PT100 probe	√	√	√	√	√	√	√
GSM Port	√	√	√	√	√	√	√
Data logger WIFI+software/hardware (temperature management Spy KW)	√	√	√	√	√	√	√
Voltage stabilizer ± 35V (±15%)	√	√	√	√	√	√	√
IQ/QQ/ecc.	√	√	√	√	√	√	√
Water condenser	√	√	√	√	√	√	√
Internal - external hole	√	√	√	√	√	√	√

√	OPTIONAL
ST	STANDARD
NO	Not Available

CERTIFIED MEDICAL DEVICE CLASS IIA

BloodLine

Plasma Freezers -20°C -50°C

HPLL

(High Performance Line)

KW -40°C PLASMA FREEZER SERIES HPLL MEDICAL DEVICE DIRECTIVE 2007/47							
HORIZONTAL MODELS HPLL -40°C	K4052	K4052E	K4054	K4054E	K4055	K4055E	K405578
External dimensions (WxDxH)	cm90x75x124	cm90x75x124	cm150x75x124	cm150x75x124	cm195x88x112	cm256x86x117	cm249x96,5x112
Internal dimensions (WxDxH)	cm50x40x50	cm63x48x55	cm115x40x50	cm124x49x55	cm122x52x75	cm180x50x78	cm176x59,5x75
Set Point	-40°C	-40°C	-40°C	-40°C	-40°C	-40°C	-40°C
Working range	-20°C -50°C	-20°C -50°C	-20°C -50°C	-20°C -50°C	-20°C -50°C	-20°C -50°C	-20°C -50°C
Capacity (litres)	110	170	230	330	480	702	785
Pre painted steel closed doors	1	1	1	1	1	1	1
Shelves/inner doors	-	-	-	-	-	-	-
Weight Kg	130	140	290	300	350	440	440
Internal surfaces standard	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet
External surfaces standard	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel
Insulation thickness	175mm	140mm	175mm	140mm	140mm	140mm	140mm
Key Lock	ST	ST	ST	ST	ST	ST	ST
4 wheels (2 with brake)	ST	ST	ST	ST	ST	ST	ST
(*) Controller HPL (display Touch Screen, Smart defrost, HT, LT, BLACK OUT, failure list, door open, switching on/off password, alarm memory, alarm test, SAFETY CONTROL, DISASTER RECOVERY, key alarm test, USB port, WI.FI, Ethernet wired)							
Controller HPL (*)	ST	ST	ST	ST	ST	ST	ST
N°2 PT100 probe(-40°C/-130°C Class A)	ST	ST	ST	ST	ST	ST	ST
RS485, USB Port and SD Card	ST	ST	ST	ST	ST	ST	ST
SW KW TRACER	ST	ST	ST	ST	ST	ST	ST
AVAILABLE ACCESSORIES							
Internal AISI 316 surfaces	√	√	√	√	√	√	√
External AISI 304 o AISI 316 surfaces	√	√	√	√	√	√	√
Rack/Cak/COS	√	√	√	√	√	√	√
Kit back up CO2 (24Vac/50Hz)	√	√	√	√	√	√	√
Kit back up LN2 (24Vac/50Hz)	√	√	√	√	√	√	√
Emergency plant CO2 (12Vac/25Hz) with temperature indipendent regulator	√	√	√	√	√	√	√
Opening door by transponder personal key	√	√	√	√	√	√	√
Electrical key	√	√	√	√	√	√	√
Temperature recorder	√	√	√	√	√	√	√
GSM port	√	√	√	√	√	√	√
Additional PT100 probe (free contacts for external data management system: data logger wireless etc.)	√	√	√	√	√	√	√
Data logger WIFI+software/hardware (temperature management Spy KW)	√	√	√	√	√	√	√
Voltage stabilizer ± 35V (±15%)	√	√	√	√	√	√	√
IQ/QQ/ecc.	√	√	√	√	√	√	√
Water condenser	NO	NO	√	√	√	√	√
Internal - external hole	√	√	√	√	√	√	√

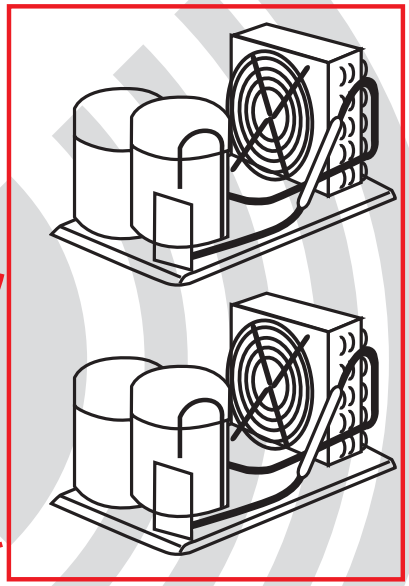
√	OPTIONAL
ST	STANDARD
NO	Not Available

BloodLine

Biological Bank -40°C -86°C

HPL

7" TFT DISPLAY



K66s HPL 2D
Ultra Freezer (-40°C/-86°C)

BIOLOGICAL BANK - In case of the two systems fails (either the thermal fluid dynamics or electrical portion), an internal control system signals the event with (permanent) visual and sound alarms and excludes the damaged system: this allows to comfortably fix the damage, not having to rush the repair and at the same time providing a faster repair operation because the internal T is maintained by the other system.

By default, both systems are programmed for alternating operation so the wear of each group is reduced **to 50%** and component-life is extended to twice the standard solutions. the reliability is maximum and also allowing the repair of the fault group maintaining internal T of work.

BloodLine

CERTIFIED MEDICAL DEVICE CLASS IIA

Biological Bank -40°C -86°C

HPL

(High Performance Line)

KW -80°C BIOLOGICAL BANK SERIES HPL MEDICAL DEVICE DIRECTIVE 2007/47						
VERTICAL MODELS	K56S	K58S	K60S	K62S	K66S	K60S-2D
External dimensions (WxDxH)	cm115x79x188	cm132x80x184	cm132x97x184	cm141x90x199	cm110x103x199	cm132x97x184
Internal dimensions (WxDxH)	cm50x45x110	cm70x46x110	cm70x65x110	cm80x59x128	cm85x73x130	cm70x65x110
Set Point	-80°C	-80°C	-80°C	-80°C	-80°C	-80°C
Working range	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C
Capacity (litres)	250	354	505	604	806	505
Pre painted steel closed doors	1	1	1	1	1	2
Shelves/inner doors	4/4	4/4	4/4	4/4	4/4	4/4
Weight Kg	350	400	430	450	540	430
Internal surfaces standard	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet
External surfaces standard	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel
Insulation thickness	140mm	140mm	140mm	140mm	140mm	140mm
Key Lock	ST	ST	ST	ST	ST	ST
4 wheels (2 with brake)	ST	ST	ST	ST	ST	ST
(*) Controller HPL (display Touch Screen, Smart defrost, HT, LT, BLACK OUT, failure list, door open, switching on/off password, alarm memory, alarm test, SAFETY CONTROL, DISASTER RECOVERY, key alarm test, USB port, WI.FI, Ethernet wired)						
Controller HPL (*)	ST	ST	ST	ST	ST	ST
N°2 PT100 probe(-40°C/-130°C Class A)	ST	ST	ST	ST	ST	ST
RS485, USB Port and SD Card	ST	ST	ST	ST	ST	ST
SW KW TRACER	ST	ST	ST	ST	ST	ST
AVAILABLE ACCESSORIES						
Internal AISI 316 surfaces	√	√	√	√	√	√
External AISI 304 o AISI 316 surfaces	√	√	√	√	√	√
V.I.P. (vacuum insulation panel)	√	√	√	√	ST	√
N.° inox drawers H100 mm	(√)8	(√)8	(√)8	(√)8	(√)8	(√)8
N.° inox drawers H200 mm	(√)4	(√)4	(√)4	(√)4	(√)4	(√)4
Rack/Cak/COS	√	√	√	√	√	√
Additional shelves	√	√	√	√	√	√
Kit back up CO2 (24Vac/50Hz)	√	√	√	√	√	√
Kit back up LN2 (24Vac/50Hz)	√	√	√	√	√	√
Opening door by transponder personal key	√	√	√	√	√	√
Electrical key	√	√	√	√	√	√
Temperature recorder	√	√	√	√	√	√
GSM Port	√	√	√	√	√	√
Emergency plant CO2 (12Vac/25Hz) with temperature indipendent regulator	√	√	√	√	√	√
Additional PT100 probe (free contacts for external data management system: data logger wireless etc.)	√	√	√	√	√	√
Data logger WIFI+software/hardware (temperature management Spy KW)	√	√	√	√	√	√
Voltage stabilizer ± 35V (±15%)	√	√	√	√	√	√
IQ/QQ/ecc.	√	√	√	√	√	√
Water condenser	NO	NO	√	√	√	√
Internal - external hole	√	√	√	√	√	√

√	OPTIONAL
ST	STANDARD
NO	Not Available

BloodLine

Biological Bank -40°C -86°C

HPL

(High Performance Line)

KW -80°C BIOLOGICAL BANK SERIES HPL MEDICAL DEVICE DIRECTIVE 2007/47							
K62S-2D	K66S-2D	HORIZONTAL MODELS	K54S	K54ES	K55S	K55ES	K5578S
cm141x90x199	cm110x103x199	External dimensions (WxDxH)	cm167x86x124	cm167x86x124	cm237x88x112	cm298x86x117	cm290x96,5x112
cm80x59x128	cm85x73x130	Internal dimensions (WxDxH)	cm115x40x50	cm123x48x55	cm122x52x75	cm180x50x78	cm176x59,5x75
-80°C	-80°C	Set Point	-80°C	-80°C	-80°C	-80°C	-80°C
-40°C -86°C	-40°C -86°C	Working range	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C	-40°C -86°C
604	806	Capacity (litres)	230	330	480	702	785
2	2	Pre painted steel closed doors	1	1	1	1	1
4/4	4/4	Shelves/inner doors	-	-	-	-	-
450	540	Weight Kg	380	400	420	520	520
AISI 304 stainless sheet	AISI 304 stainless sheet	Internal surfaces standard	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet
Prepainted steel	Prepainted steel	External surfaces standard	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel
140mm	140mm	Insulation thickness	175mm	140mm	140mm	140mm	140mm
ST	ST	Key Lock	ST	ST	ST	ST	ST
ST	ST	4 wheels (2 with brake)	ST	ST	ST	ST	ST
(*) Controller HPL (display Touch Screen, Smart defrost, HT, LT, BLACK OUT, failure list, door open, switching on/off password, alarm memory, alarm test, SAFETY CONTROL, DISASTER RECOVERY, key alarm test, USB port, WI.FI, Ethernet wired)							
ST	ST	Controller HPL (*)	ST	ST	ST	ST	ST
ST	ST	N°2 PT100 probe(-40°C/-130°C Class A)	ST	ST	ST	ST	ST
ST	ST	RS485, USB Port and SD Card	ST	ST	ST	ST	ST
ST	ST	SW KW TRACER	ST	ST	ST	ST	ST
		AVAILABLE ACCESSORIES					
√	√	Internal AISI 316 surfaces	√	√	√	√	√
√	√	External AISI 304 o AISI 316 surfaces	√	√	√	√	√
√	ST	Rack/Cak/COS	√	√	√	√	√
(√)8	(√)8	Kit back up CO2 (24Vac/50Hz)	√	√	√	√	√
(√)4	(√)4	Kit back up LN2 (24Vac/50Hz)	√	√	√	√	√
√	√	Emergency plant CO2 (12Vac/25Hz)	√	√	√	√	√
√	√	Opening door by transponder personal key	√	√	√	√	√
√	√	Electrical key	√	√	√	√	√
√	√	Temperature recorder	√	√	√	√	√
√	√	GSM port	√	√	√	√	√
√	√	Additional PT100 probe	√	√	√	√	√
√	√	Data logger WIFI+software/hardware	√	√	√	√	√
√	√	(temperature management Spy KW)					
√	√	Voltage stabilizer ± 35V (±15%)	√	√	√	√	√
		IQ/QQ/ecc.	√	√	√	√	√
√	√	Water condenser	√	√	√	√	√
		Internal - external hole	√	√	√	√	√
√	√						
√	√						
√	√						
√	√						

√	OPTIONAL
ST	STANDARD
NO	Not Available

CERTIFIED MEDICAL DEVICE CLASS IIA

BloodLine

Biological Bank -20°C -50°C

HPLL

(High Performance Line)

KW -40°C BIOLOGICAL BANK SERIES HPLL MEDICAL DEVICE DIRECTIVE 2007/47						
VERTICAL MODELS	K4056S	K4058S	K4060S	K4062S	K4066S	K4060S-2D
External dimensions (WxDxH)	cm115x79x188	cm132x80x184	cm132x97x184	cm141x90x199	cm110x103x199	cm132x97x184
Internal dimensions (WxDxH)	cm50x45x110	cm70x46x110	cm70x65x110	cm80x59x128	cm85x73x130	cm70x65x110
Set Point	-40°C	-40°C	-40°C	-40°C	-40°C	-40°C
Working range	-20°C -50°C	-20°C -50°C	-20°C -50°C	-20°C -50°C	-20°C -50°C	-20°C -50°C
Capacity (litres)	250	354	505	604	806	505
Pre painted steel closed doors	1	1	1	1	1	2
Shelves/inner doors	4/4	4/4	4/4	4/4	4/4	4/4
Weight Kg	350	400	430	450	540	430
Internal surfaces standard	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet
External surfaces standard	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel
Insulation thickness	140mm	140mm	140mm	140mm	140mm	140mm
Key Lock	ST	ST	ST	ST	ST	ST
4 wheels (2 with brake)	ST	ST	ST	ST	ST	ST
(*) Controller HPL (display Touch Screen, Smart defrost, HT, LT, BLACK OUT, failure list, door open, switching on/off password, alarm memory, alarm test, SAFETY CONTROL, DISASTER RECOVERY, key alarm test, USB port, WI.FI, Ethernet wired)						
Controller HPL (*)	ST	ST	ST	ST	ST	ST
N°2 PT100 probe(-40°C/-130°C Class A)	ST	ST	ST	ST	ST	ST
RS485, USB Port and SD Card	ST	ST	ST	ST	ST	ST
SW KW TRACER	ST	ST	ST	ST	ST	ST
AVAILABLE ACCESSORIES						
Internal AISI 316 surfaces	√	√	√	√	√	√
External AISI 304 o AISI 316 surfaces	√	√	√	√	√	√
V.I.P. (vacuum insulation panel)	√	√	√	√	ST	√
N.° inox drawers H100 mm	(√)8	(√)8	(√)8	(√)8	(√)8	(√)8
N.° inox drawers H200 mm	(√)4	(√)4	(√)4	(√)4	(√)4	(√)4
Rack/Cak/COS	√	√	√	√	√	√
Additional shelves	√	√	√	√	√	√
Kit back up CO2 (24Vac/50Hz)	√	√	√	√	√	√
Kit back up LN2 (24Vac/50Hz)	√	√	√	√	√	√
Opening door by transponder personal key	√	√	√	√	√	√
Electrical key	√	√	√	√	√	√
Temperature recorder	√	√	√	√	√	√
GSM Port	√	√	√	√	√	√
Emergency plant CO2 (12Vac/25Hz) with temperature indipendent regulator	√	√	√	√	√	√
Additional PT100 probe (free contacts for external data management system: data logger wireless etc.)	√	√	√	√	√	√
Data logger WIFI+software/hardware (temperature management Spy KW)	√	√	√	√	√	√
Voltage stabilizer ± 35V (±15%)	√	√	√	√	√	√
IQ/QQ/ecc.	√	√	√	√	√	√
Water condenser	NO	NO	√	√	√	√
Internal - external hole	√	√	√	√	√	√

√	OPTIONAL
ST	STANDARD
NO	Not Available

BloodLine

Biological Bank -20°C -50°C

HPLL

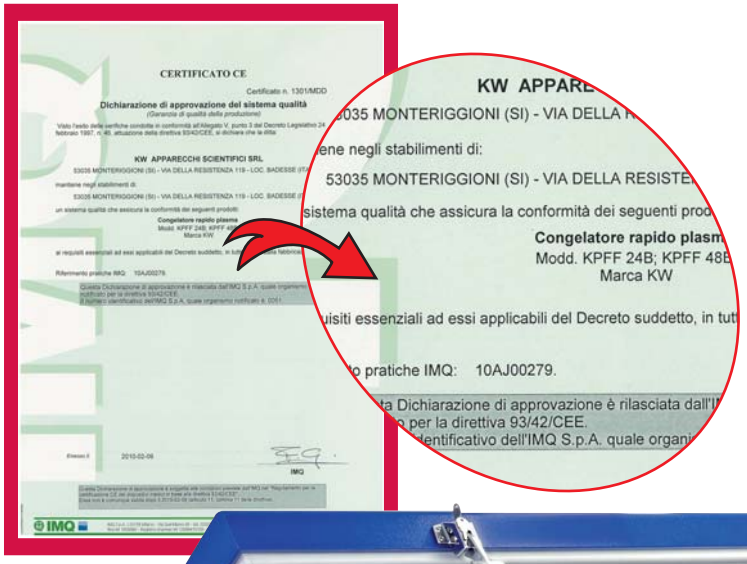
(High Performance Line)

KW -40°C BIOLOGICAL BANK SERIES HPLL MEDICAL DEVICE DIRECTIVE 2007/47							
K4062S-2D	K4066S-2D	HORIZONTAL MODELS	K4054S	K5404ES	K4055S	K4055ES	K405578S
cm141x90x199	cm110x103x199	External dimensions (WxDxH)	cm167x86x124	cm167x86x124	cm237x88x112	cm298x86x117	cm290x96,5x112
cm80x59x128	cm85x73x130	Internal dimensions (WxDxH)	cm115x40x50	cm123x48x55	cm122x52x75	cm180x50x78	cm176x59,5x75
-40°C	-40°C	Set Point	-40°C	-40°C	-40°C	-40°C	-40°C
-20°C -50°C	-20°C -50°C	Working range	-20°C -50°C	-20°C -50°C	-20°C -50°C	-20°C -50°C	-20°C -50°C
604	806	Capacity (litres)	230	330	480	702	785
2	2	Pre painted steel closed doors	1	1	1	1	1
4/4	4/4	Shelves/inner doors	-	-	-	-	-
450	540	Weight Kg	380	400	420	520	520
AISI 304 stainless sheet	AISI 304 stainless sheet	Internal surfaces standard	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet
Prepainted steel	Prepainted steel	External surfaces standard	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel	Prepainted steel
140mm	140mm	Insulation thickness	175mm	140mm	140mm	140mm	140mm
ST	ST	Key Lock	ST	ST	ST	ST	ST
ST	ST	4 wheels (2 with brake)	ST	ST	ST	ST	ST
(*) Controller HPL (display Touch Screen, Smart defrost, HT, LT, BLACK OUT, failure list, door open, switching on/off password, alarm memory, alarm test, SAFETY CONTROL, DISASTER RECOVERY, key alarm test, USB port, WI.FI, Ethernet wired)							
ST	ST	Controller HPL (*)	ST	ST	ST	ST	ST
ST	ST	N°2 PT100 probe(-40°C/-130°C Class A)	ST	ST	ST	ST	ST
ST	ST	RS485, USB Port and SD Card	ST	ST	ST	ST	ST
ST	ST	SW KW TRACER	ST	ST	ST	ST	ST
		AVAILABLE ACCESSORIES					
√	√	Internal AISI 316 surfaces	√	√	√	√	√
√	√	External AISI 304 o AISI 316 surfaces	√	√	√	√	√
√	ST	Rack/Cak/COS	√	√	√	√	√
(√)8	(√)8	Kit back up CO2 (24Vac/50Hz)	√	√	√	√	√
(√)4	(√)4	Kit back up LN2 (24Vac/50Hz)	√	√	√	√	√
√	√	Emergency plant CO2 (12Vac/25Hz)	√	√	√	√	√
√	√	Opening door by transponder personal key	√	√	√	√	√
√	√	Electrical key	√	√	√	√	√
√	√	Temperature recorder	√	√	√	√	√
√	√	GSM port	√	√	√	√	√
√	√	Additional PT100 probe	√	√	√	√	√
√	√	Data logger WIFI+software/hardware	√	√	√	√	√
√	√	(temperature management Spy KW)					
√	√	Voltage stabilizer ± 35V (±15%)	√	√	√	√	√
		IQ/QQ/ecc.	√	√	√	√	√
		Water condenser	√	√	√	√	√
√	√	Internal - external hole	√	√	√	√	√
√	√						
√	√						
√	√						
√	√						
√	√						

√	OPTIONAL
ST	STANDARD
NO	Not Available

BloodLine

Rapid freezer for Plasma on contact


CERTIFICATO CE
Dichiarazione di approvazione del sistema qualità
KW APPARECCHI SCIENTIFICI SRL
KW APPARE
ene negli stabilimenti di:
53035 MONTERIGGIONI (SI) - VIA DELLA RESISTE
sistema qualità che assicura la conformità dei seguenti prod
Congelatore rapido plasm
Modd. KPFF 24B; KPFF 48
Marca KW
uisiti essenziali ad essi applicabili del Decreto suddetto, in tut
o pratiche IMQ: 10AJ00279.
ta Dichiarazione di approvazione è rilasciata dall'I
o per la direttiva 93/42/CEE.
dentificativo dell'IMQ S.p.A. quale organi
IMQ

MEDICAL DEVICE
CLASS
II A

DIRECTIVE 2007/47 CE

CLINICALLY VALIDATED

KPFF 24B
Plasma Fast Freezing

BloodLine

Rapid freezer for Plasma on contact

KW in addition to the -40°C liquid bath freezer, proposes an alternative solution, satisfying however the technical advices and the normative in place, on the freezing time of the plasma bags.
The adapted principal of thermal exchange, in this case, does not use a cold bath at - 40°C, but -75/-80°C surfaces, with which the bags are in direct contact.
The plasma bags, to be frozen, are immersed, vertically, in wells in which the walls are at least –75°C -80°C. The geometry of the wells is conical, to simplify extraction and formation of the solid bag, without any impediment for the increase in volume which happens when there is a passing in state from liquid to solid.

RAPIDITY FREEZING
the bag is in contact with the surfaces of the wells and intense extraction of thermal energy is obtained in this manner, minimizing in this way the freezing time: **< 45' for 24 or 48 (450 ml.) nominal standard bags, with a net content of plasma of at least 230 cc. and an initial temperature between + 25°C and + 30°C KW has undertaken tests with bags with a mass of 260 gr. each.**
These data confirm the good quality of frozen fresh plasma, with freezing quick system of KW freezer KPFF24_48B.
The storage solution in vertical encounters, in fact, all the freezing advantages of the horizontal freezers, leaving the vertical placement of the plasma bags salvaged.
The surface of the wells is smooth and in inox steel, without edges, and therefore permit the safe storage against accidental breaks or bumps of the bags; permits furthermore the eventual download of liquids exiting due to breakage, from the bottom, or the successive condensation to a freezing and maintenance stop, be means of outlets (one for each well), all gathered and l eading to a single external tube.

Furthermore, the solution of the horizontal freezer maintains the following advantages:

- **TEMPERATURE UNIFORMITY**
  minimum alteration of the internal T during the loading phase of the plasma bags seeing as the movement is minimal from the internal cold air, that tends to remain on the bottom of the wells guaranteeing good cooling – freezing during the bag contact – well walls.
- **VERTICAL FREEZING**
  simplifies the bag immersion seeing as the operator does not feel the intense coldness from the wells and no air bubble inside the bags, with minimum breakage risk of the bags; the shape of frozen bag is like a tile, so the following phase of storage is easier.
- **SPATIAL DISTRIBUTION of BAGS**
  In conventional freezer, with horizontal shelves, the plasma bags are often stored on one another and air distribution is not perfect. It follows that freezing of the individual pockets varies considerably. In contrast, the freezing procedure proposed by KW guarantees identical conditions of freezing for each individual bag, with consequent higher yields of factor VIII and more reliable. The shape of the bag is very compact, in the form of a thin parallelepiped, and allows easy storage.
- **SEMI-AUTOMATIC STORAGE (option on request)**
  when the door is closed, the deflectors move automatically compressing pockets in the wells for optimum freezing. (increased safety and ease of use)

BloodLine

Rapid freezer for Plasma on contact

• MINIMUM MAINTENANCE

No ice formation in the area around the wells and in the retention gaskets, for minimum maintenance and an absolute guarantee of the maintenance of a constant T of -75/-80 °C.; no necessity of defrosting, possibility of continuous freezing.

• MAX ERGONOMICS

An handy load height eases the operator, without the introduction of any addition to a very low T and without contact with the cold air

• ENERGY SAVING

minimum energy consumption in addition to the thermodynamic performance, thank to the high insulation and to the horizontal positions of the- 80°C wells.

• PROCESS TRACEABILITY

It's possible to equip the freezer with an electronic recorder and a bar code reader; the user can set a work schedule for single freezing batch, determining a) the single plasma units b) the operator c) the pulling down curve of T: All data are exportable whether in paper format or in digital format, which guarantee the full traceability of the freezing batch.

• QUALITY OF FROZEN PLASMA

The quality was evaluated through the values of concentration of fibrinogen, before and after freezing, and concentration of VIII factor post freezing. The recovery of 96% of fibrinogen and 81% of concentration of VIII factor post, are very good results.

STRUCTURE:

Internal case, made of **6 wells** (in the **KPFF24B** model) and of **12 wells** (in the **KPFF48B** model) in inox AISI 304 steel (AISI 316 on request) with BA polished finishing, with rounded corners for easy cleaning.
The external structure is in glazed inox AISI 304 steel sheet; the insulation is in polyurethane CFC and HCFC free, expanded in situ, with density of 40 Kg./mc. and with a **minimum mean width of 175 mm.**
The door is mounted on the hinges with ABS cover, **auto balanced**.

Triple gasket (absolute retention guarantee against air entry) in silicon rubber with welded joints, warmed up by the refrigerant and of unlimited duration.

The handle has a very ergonomic design and has a key lock.
The freezer has pivoting wheels for easy transportation and internal movement in the laboratories.
KW's guarantee on the steel parts of the structure is for life.

BloodLine

Rapid freezer for Plasma on contact

REFRIGERATON:

The refrigerant system is completely sealed up; **it uses a cascade circuit, innovative in its components and in the fluids to follow, together with, maximum reliability and maximum performance cooling;** with 2 hermetic compressors (of more than 2 HP of power) silent (the Leq dB (A) value< 65; at more than 3 metres < 55), at high capacity refrigerant, having magnetic-thermal protection and of a manostat of maximum/minimum pressure on both circuits: total reliability and absence of failures 1st stage.

The condensation surface of the 1st stage (air and thermal yield superior to 5000-10000 Watt, with environment T of about + 25° C), are very ample (with exchangers in tubeless execution) to overcome the most severe environmental and work conditions (functioning guarantee of environment T ≤ +35°C); this is also for the second stage, with more exchangers, both air, and counter current, between the two fluids in bi-phase conditions. The expansion of the refrigerating fluids is obtained using special thermostatic valves; the evaporators made up of serpentine tube in cooper thermally connected – to the entire external peripheral surface of the freezing wells. The solution, together with the use of tanks for refrigeration, guarantees:

- **a great reserve of liquid, a consecutive fast response to the cold request in the act of introducing the bags and therefore a high refrigerant capacity (very rapid freezing)**
- **high internal temperature uniformity.**

The entire thermofluidodynamic circuit is made in order to have maximum functionality (efficiency, reliability) and of maximum ease on the maintenance operations, and furthermore for maximum safety to the environment and operators, by means of inter-stage thermostats, of HP and LP manostats, etc. etc. The refrigerants used are not toxic, inflammable, not explosive and ecological (maximum respect for the environment) HC free, CFC free, HCFC free (ODP=0 OZONE POTENTIAL DEPLETION).

R404A in the first refrigeration stage

R508B in the second refrigeration stage

TERMOREGULATION AND CONTROLS:

The electrical command installations enabled by a switch under key (extractable in both conditions) for maximum safety in the management of the machine; and furthermore is present a light to signal the power supply. The internal T regulation is managed by a control panel that includes:

- **digital electronic control with µP, having led display with both T set and actual -T values, with changeable hysterisis, with ON/OFF action.**

The thermal probes used are thermo resistant RTD Pt 100 Ohm, placed in the air. The user may read the process T (the actual one in the freezing wells) in the display above, with in the inferior may verify the predefined set point value.

KPFF 24B
Plasma Fast Freezing

BloodLine

Rapid freezer for Plasma on contact

On the side of the display mentioned, there are functional leds:

• **COOLING** indicates that the refrigerator installation is working

• **ALARM** indicates the process value is out of acceptable range of T, with respect to the set point; having to do with the min /max alarm T default T set ± 10°C,. this alarm is both optical and visual and may be turned off by acting on the BUZZER OFF. indicates the visual alarm (red led turned on) persists until the system does not exit from the alarm conditions.

• **TIMER** indicates that there is in act the counting of time (setted by the user) of freezing. The lab technician may read the count down (in minutes) on the lower display, while on the upper one remains the T indication of the process inside the wells.

When the cycle is finished, i.e. when the time set by the user is over, the following visual signal appears End on the lower display. And an acoustic buzzer is activated to signal the end of the cycle; it may be turned off by pressing the RUN or FUNC buttons.

POWER FAIL

The rapid plasma freezer also has an energy acoustic alarm independent power supply (estimated battery life span of about 3 years) 12 Vdc 1.2 Ah that recharges automatically on the return of the electrical power supply, via a switching supply. the buzzer may be turnedoff, by pressing the BUZZER OFF button.

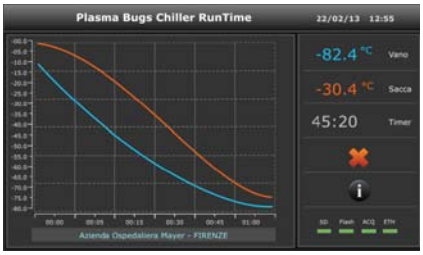
SIGNAL REMOTING

All the alarms are integrated and connected to distance signal repeating unit, having a plug and relative socket (5A), ready for cabling according to the user (sounders and visual signalling devices in the laboratory, tele– alarm unit, etc.).

ACCESSORIES: (available on request)

• open door alarm

7" TFT Display Touch Screen



• **BAGS TEMPERATURE RECORDER *(RTS SYSTEM)***

Automatic recording of the pockets of fresh plasma or by bar code reader or by RFID reader

The "Bag Temperature Recorder" device, from now on called RTS System, use the tab **touch TFT display 7"** with dedicated software and the quick freezer board with dedicated firmware, as acquirer of temperature together with the compatibility of the application for PC Freezing Tracer for reading the graphs of the freezing process and the codes of pockets Functionality:

- **Reading and recording up to a maximum of 8 PT100 channels** (6 + 2);
- **Selection through display of the probe of active registration**; with exclusion of the visualization and tracking of the remaining probes excluded, with the exception of the probe in the cabinet that remains always enabled.

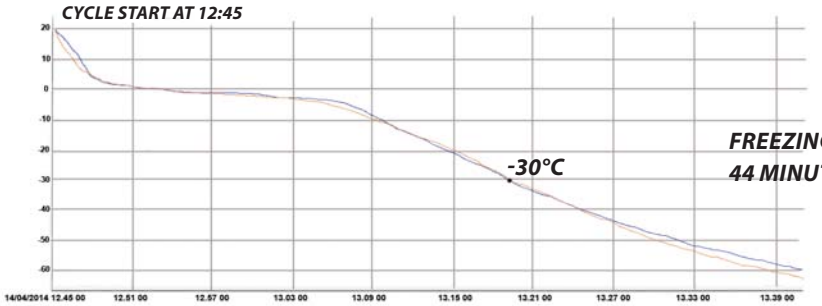
Association of barcodes relative to the bags in abatement related to the circuit temperature air/sample bag (there is a differentiation of the air probe and probe pockets sample)

- **Ability to select, along with the bar code, the type of bag**: large 650ml plasmapheresis or small by donation 260 ml.
- **Enabling a clean digital input for synchronizing the start of recording with the start of the unit abatement.**
- Enable output on/off switch to stop the cycle of freezing when the pre-set temperature is reached in all pockets connected during the test cycle of freezing data management
- **Historization cycles/codes on SD Card - Export of cycles/codes via USB port**
- Reading and printing cycles/codes through the application Freezing Tracer RTS
- Installing and configuring FTP server embedded on each machine

Internal case of the rapid freezer with standard 450 ml. bags in freezing

Standard 450 ml. bags after freezing

Cooling curve in the freezing weels (standard 450 ml. bag)



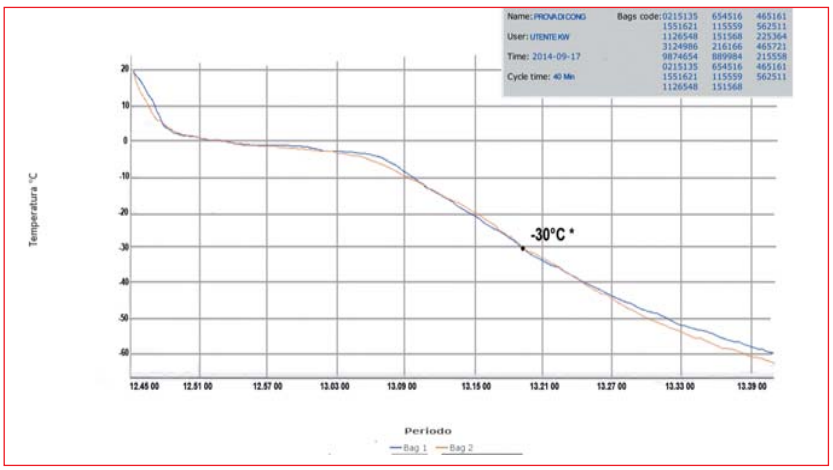
Nome	N misure	Unità	Media	MKT	Minimo	Massimo	Deviazione	Durata allarme
KWSP30TE Canale 1	56	°C	-21,14	-2,56	-58,8	20,1	22,28	00:00:00
KWSP30TE Canale 2	56	°C	-21,61	-1,94	-61,6	20,1	23,21	00:00:00

Internal case of the rapid freezer with standard 1000 ml. bags in freezing

Standard 1000 ml. bags after freezing

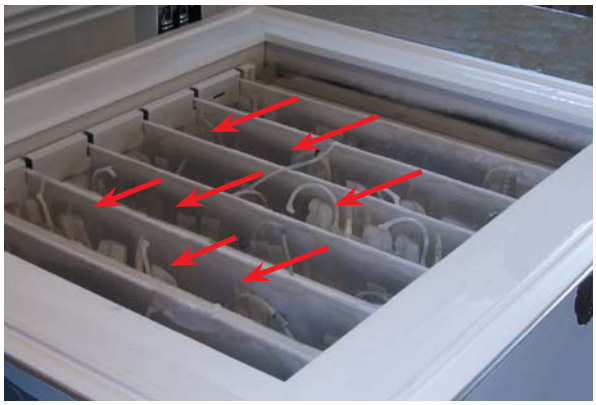
Standard 1000 ml. bags after freezing

Cooling curve in the freezing weels with 48 big plasma bags (1000 ml.) at the same time



NEW SYSTEM SEMI-AUTOMATIC STORAGE KW

Opened door, wells free for introduction and/ or extraction of plasma bags



When the door is closed, the baffles automatically move, compressing plasma bags inside the wells, for the best freezing

CONTROL PANEL

KPFF 24B
Plasma Fast Freezing

AUTOMATIC DATA DOWNLOADING

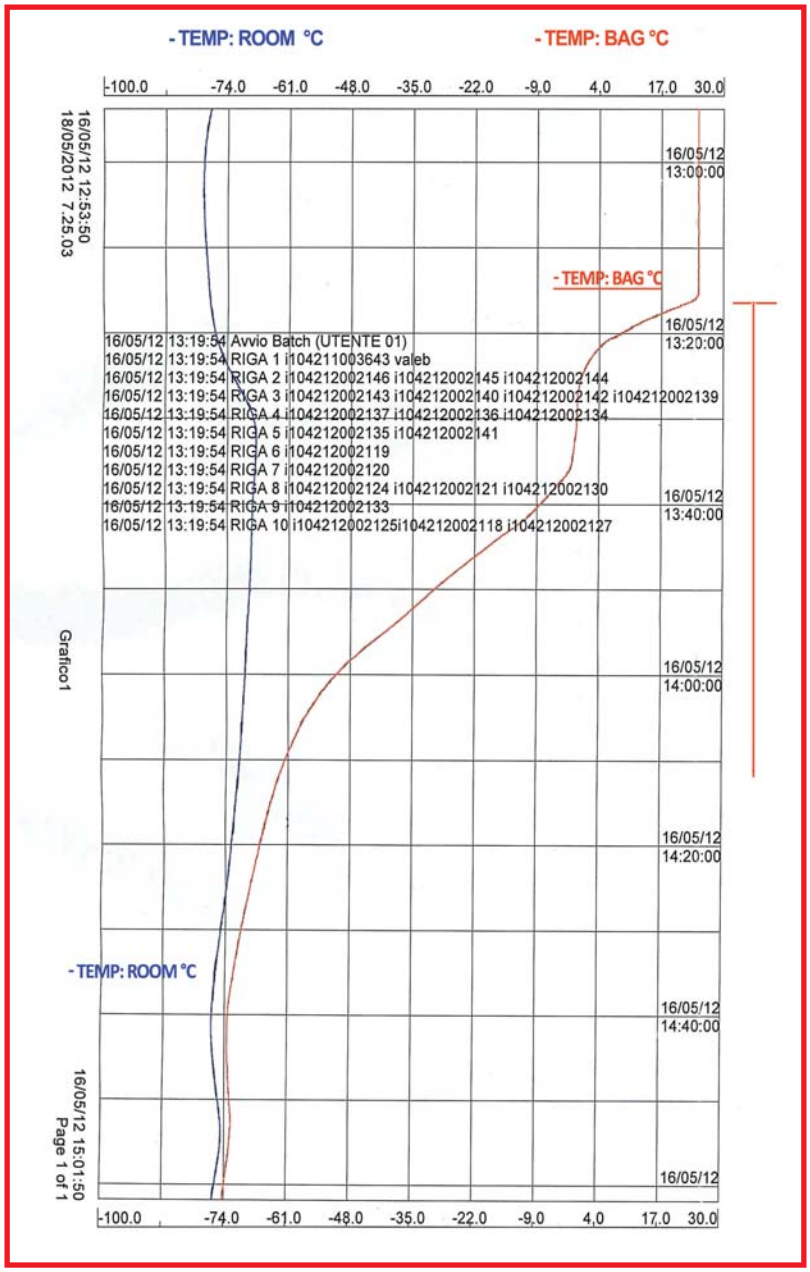
Possibility of automatic data downloading to the end of each cycle of freezing and availability/traceability of the plan of freezing on the internal laboratory network. At the same time of the refrigeration system action, time count on the digital electronic recorder is activated, without any further intervention by the operator

KPFF 48B

GUARANTEED TRACEABILITY

With the recording of the procedure all operative phases, by a digital system touch screen and by a bar code reader, with many possibilities for the connection to the transfusion centre network

Rapid freezer for Plasma on contact



EXAMPLE OF FREEZING CYCLE DIAGRAM

Rapid freezers for Plasma on contact

K= Kalt **P**= Plasma **F**= Fast **F**= Freezer 24 - 48 (number of 450 ml. standard bags or 1000 ml.) **B**= Bags

Model	Max external dimensions (lxwxh)	Plasma bags shelf level	Internal wells	Used refrigerants	Power supply	Weight
KPFF 24B	cm. 120x84x126 h	117 cm	n.6 (to 4 bags cad.)	R404A ed R508B	V 230/1/Hz 50 max absorption 15 A *(on request, execution 400V/3/50Hz+N+T)*	Kg. 250
KPFF 48B	cm. 179x84x126 h	117 cm	n.12 (to 4 bags cad.)	R404A ed R508B	V 400/3/Hz 50 +N+T max absorption 10 A	Kg. 400

BloodLine

Plasma & Stem Cell Thawer model WPFD - WSCFD

W-PFD® Plasma Fast Thawer WSCFD® Stem Cell Fast Thawer

Medical Device - CEE 93/42

"TOUCH SCREEN "DISPLAY

MEDICAL DEVICE CLASS I

N. Patent: 0001404653
29 November 2013

Slot for USB

Slot per SIM Card

Wi-Fi Ethernet

Model WPFD - WSCFD

BloodLine

Plasma & Stem Cell Thawer model WPFD - WSCFD

W-PFD® Plasma Fast Thawer WSCFD® Stem Cell Fast Thawer

Medical Device - CEE 93/42

The thawer line has been developed thanks to partnership work, in which KW involved different skills, right from the start of the project: from clinical and medical competence to industrial and scientific research, combining them with its thorough manufacturing know-how.
And it has been patented by KW.
W-PFD (or W-SCFD) is a completely innovative machine, both from the point of view of the choice of materials and in the way it works.
In fact, using this thawer it is possible to trace every step of the process; by reading the bar code or other forms of identification, the machine can recognise the operator, the type of bag and then from the bag trace the donor.
Through the electronic control unit with touch screen it is possible to transfer the information in the user's local network or file all the defrosting plan data on SD cards.
Unlike other appliances on the market, which only measure the temperature of the bath, the KW thawer, which has several sensors in each pocket, continuously keeps the temperature of each bag under control, ensuring:

- Total traceability of everything that has occurred during defrosting.
- Validation of the entire defrosting process.
- Perfect homogeneity of the plasma defrosted with Hydro_pump_massage® i.e. the machine can subject the bag to a hydromassage treatment, so that at the end of defrosting the plasma is homogenised reaching a better quality.
- Asynchronous defrosting of several units of fresh frozen plasma or of several units of stem cells; the thawer is fitted with different independent heating units, so it is possible to activate the heating processes asynchronously and in a fully independent way.
- No stoppage of laboratory activity, except for exceptional events. Should any problems arise in a defrosting pocket, or if a bag breaks, the contents would in any case remain inside the pocket without contaminating the heating fluid. The pocket can easily be removed, washed under running water and then refitted without stopping the heating process of the other pockets.
- High machine productivity due to all the reasons mentioned above.

The W-PFD, W-SCFD line is a veritable challenge to common sense in terms of size, structure and information available. The KW fast defrosting system for plasma and stem cells represents the new point of reference for the user interface and for the functions of medical equipment, where a high visual impact is combined with sophisticated management of the bag preparation unit.

BloodLine

Plasma & Stem Cell Thawer model WPFD - WSCFD

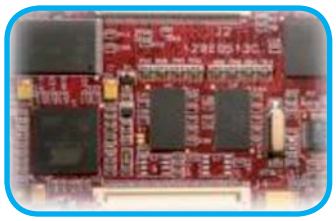
W-PFD® Plasma Fast Thawer WSCFD® Stem Cell Fast Thawer

Medical Device - CEE 93/42

Innovation of the user interface with "touch screen "display

DISPLAY 7.0" WIDE 165x105 mm

Display	**TFT Touch screen 7.0" wide**
Power supply	**from Power Board**
Dimensions	**197x122x50 mm**
Front ports	**USB - Slot per SIM Card e SD Card**
Ports	**Ethernet**
Slot	**for modem GSM (optional)**
CPU	**Atmel® at91 sam9261 256 Mb flash**
	Operating System Linux 2.6.33



CPU board

Functions

Thus system has up to three different defrosting pockets, each fitted with two temperature sensors, which allow the corresponding cycles for the preparation of blood bags to infusion temperature to be carried out simultaneously.

The following operating parameters can be defined for each pocket:

- **End of cycle temperature**
- **End of cycle time**
- **Bag mode**
- **Plasma mode**
- **Cell stem mode**
- **WARMER MODE**

WARMER MODE for warming of blood, blood products and infusion solutions

Therefore each cycle can be controlled in temperature (when it is reached, the cycle ends automatically) and in any case within the set time limit, or by time.

Each of these processes are constantly monitored and recorded with the possibility of tracing the defrosting curve on the screen throughout the cycle time.

Every single defrosting cycle is stored in the memory to allow the historic retrieval of the various cycles according to the date, bag, addressee and the user who has performed the actual cycle.

Also all the operating variables are monitored in real time. At any non-conformity event, the screen shows an alarm warning. Therefore, the user can view the detail of the alarm in progress and decide the corrective action to be taken. Clearly, the system also stores the cycles interrupted due to an alarm.

A sensor warns the operator of breakage of the bag. The end of a bag preparation cycle is indicated on the screen, the pocket door is released and the user can take out the bag ready for use

BloodLine

Plasma & Stem Cell Thawer model WPFD - WSCFD

W-PFD® Plasma Fast Thawer WSCFD® Stem Cell Fast Thawer

Medical Device - CEE 93/42

Cycle recording/identification

The thawer stores the cycle operating data once a minute on an SD Card.
Through an optional bar code every cycle can be allocated the identification of the bag, operator, etc.
These can be viewed in graphic and table form on the display itself or transferred to a PC via USB pen drive for further processing.
Or the appliance can be included in the user LAN via Ethernet port (also Wi-Fi)

Figure 1: To thaw one 260 ml bag, cycle time can be set between 15 and 18 minutes with tray temperature of 40°C

The graph shows a representative case of the recording of a 260 ml bag thawing cycle.
In this step, we performed a total of 9 tests, detecting a mean bag core temperature of 26°C and assessing that the minimum cycle duration is equal to 15 minutes.

Figure2: To thaw one or more 600 ml bags, cycle time can be set between 25 and 27 minutes, with tray temperature of 40°C

The graph shows a representative case of the recording of a 600 ml bag thawing cycle.
In this step, we performed a total of 12 tests, detecting a mean bag core temperature of 24.9°C and assessing that the minimum cycle duration is equal to 25 minutes.

BloodLine

Plasma & Stem Cell Thawer model WPFD - WSCFD

W-PFD® Plasma Fast Thawer WSCFD® Stem Cell Fast Thawer

Medical Device - CEE 93/42

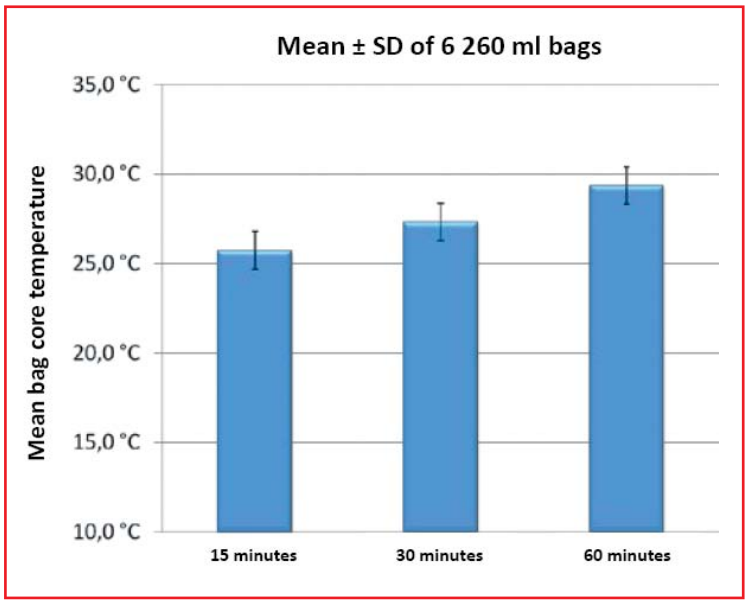


Figure 3: Even in case of negligence on the part of the operator, the mean temperature of the thawed bags does not reach potentially dangerous levels

Worst-case simulation: after a normal 15 minute thawing cycle, the 260 ml bag was left inside the thawer and bag core T was measured after 30 and 60 minutes. We assessed that bag core T increases by an average of approx. 2°C every 30 minutes, but does not reach potentially dangerous levels for product integrity even after 60 minutes.

Access control

Each user can be associated with a password that allows access to one or more system functions:

- Cycle start
- Operating parameter setting
- Mode choose
- Date/time setting
- Turning off
- Etc...

A dedicated window shows the cycles performed on the day selected for every user.

BloodLine

Plasma & Stem Cell Thawer model WPFD - WSCFD

W-PFD® Plasma Fast Thawer WSCFD® Stem Cell Fast Thawer

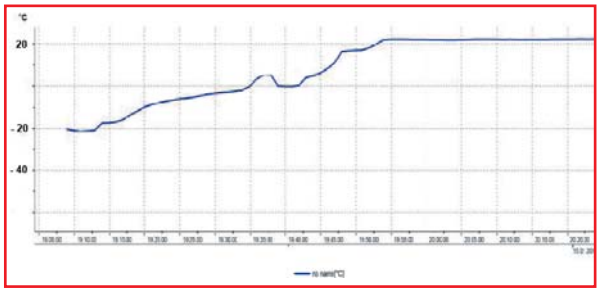
Medical Device - CEE 93/42

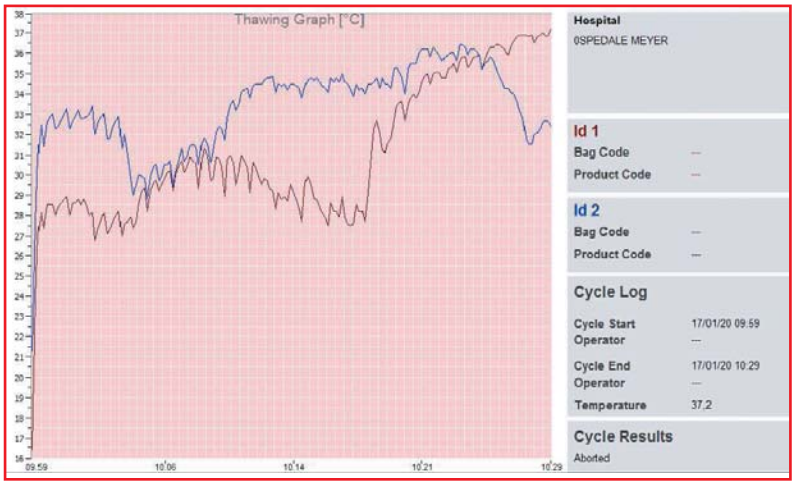
TEST N.9 PLASMA BAGS THAWING

For emergency situations.

To thaw 9 plasma bags with cycle time of 35 minutes. Below - Graph of thawing 2 plasma bags (for each pocket) + Graph of the third plasma bag and detected with internal probe.

(Clinically Validated)





Plasma bags position inside pocket

BloodLine

Plasma & Stem Cell Thawer model WPFD - WSCFD

W-PFD® Plasma Fast Thawer WSCFD® Stem Cell Fast Thawer

Medical Device - CEE 93/42

Models and specifications

Model	Defrosting capacity	Dimensions lxpxh (mm)	Net weight
WPFD 3/6 (3 pockets)	Up to 3, 1000 ml bags or 6, 460 ml bags	516x600x562	30 Kg
WPFD 1/2 (1 pocket)	1, 1000 ml bag or 2, 460 ml bags	540x370x562	20 Kg
WSCFD 1/2	1 stem cell bag of varying capacity	243x314x442	8 Kg

Model WPFD: Plasma and Stem Cell Thawer

Model WSCFD: Stem Cell Thawer

Specifications shared by models WPFD-WSCFD	
Power supply	230 Vac-50 Hz 800W
Adjustment range	Up to +40°C and more
Interface	Bar code scanner, USB, SIM card, SD card, outside PT100 sensor, Ethernet port (also Wi-Fi)

N. Patent: 0001404653 29 November 2013
Ministero dello Sviluppo Economico
Ufficio Italiano Brevetti e Marchi
EP2510965

BloodLine

Plasma & Stem Cell Thawer model WPFD - WSCFD

W-PFD® Plasma Fast Thawer WSCFD® Stem Cell Fast Thawer

Medical Device - CEE 93/42

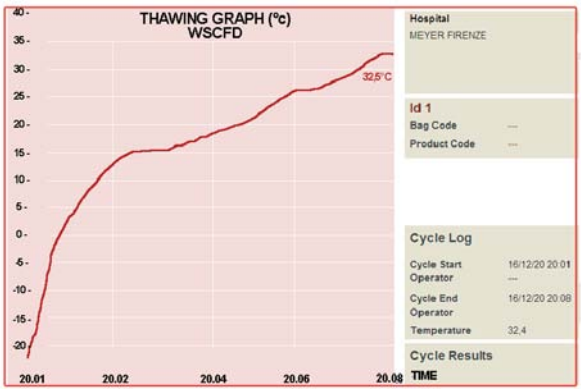
MEDICAL DEVICE CLASS I

Stem Cell Thawer model WSCFD

(Clinically Validated)

Experiences thawing of hematopoietic stem cells in the context of autologous or allogeneic, conducted in laboratory with **WSCFD**, showed that:

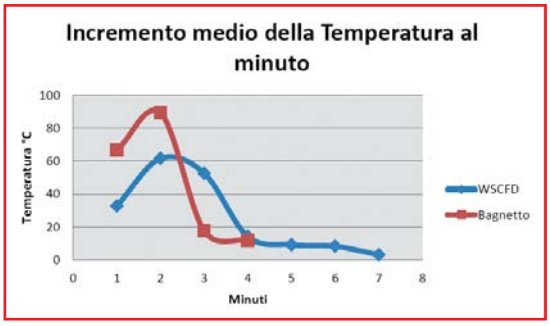
- The graphs of thawing and subsequent heating of the stem cells, are perfectly superposable to those made with the classic method of thawing in use, in most laboratories, which involves the use of the bath + 37°C; and also there are benefits about the greater linearity of the average of the T cell and the consequent lower thermal shock.



- The recovery, post thawing, CD34 + cells and leukocytes is similar or even better with the KW thawer, compared to traditional process until now in use.

- The safety of the process in the handling CSE is decidedly superior and supported by a traceability documented, especially useful in view of the evolution of the laboratories in terms of quality management processes.

By activating the massage *hydro massage pump*, there is an increase in the average temperature of the cells stem more linear compared to classic bath, ensuring a lower thermal shock to the cells.



Mean increase in temperature per minute.

BloodLine

Plasma & Stem Cell Thawer model WPFD - WSCFD

W-PFD® Plasma Fast Thawer WSCFD® Stem Cell Fast Thawer

Medical Device - CEE 93/42

New features compared with state of the art

- The plasma bag does not directly contact the thermostatic bath, therefore it remains completely dry and protected against contamination.
- The pocket material is guaranteed to remain intact even after repeated insertions of the frozen bag, which might have cutting edges.
- The temperature sensors inside the pocket allow recording the trend of the heating process for each bag.
- The machine version with three trays allows the fully independent and asynchronous activation of 3 heating processes.
- Alarm in the case of plasma bag breakage.
- The temperature of the thermostatic bath can be higher than the final temperature required for the plasma bag, as the temperature sensors in contact with the bag indicate that heating has taken place to the set temperature and the control system interrupts the process emptying the tray in just seconds.

This way the process time can be reduced.

- It is possible to activate the function for massaging the bag and homogenising the plasma by quickly filling and emptying the operating tray of the individual defrosting pocket.

• Simple to use:

There is no need to indicate the defrosting time in relation to the bag size, as the machine interrupts the process when the required temperature is reached.

- The user can see the surface temperature reached by the bag in real time on the display.
- The whole process is recorded automatically.
- Total connectivity.

• Simple to clean:

If the bag is broken the contents remain inside the pocket without contaminating the thermostatic bath; the pocket can easily be removed, washed under running water and then refitted.
The bath water is treated with sterilising substances according to the maintenance procedures.

BloodLine

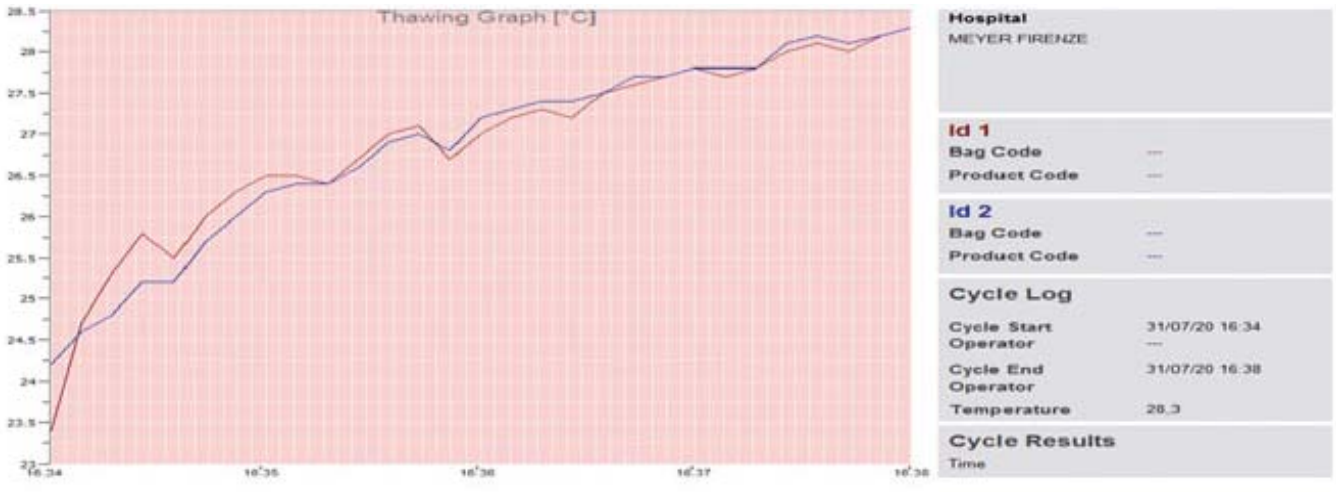
Warmer WB&BP® Warming Blood and Blood Products

Medical Device Classe I - CEE 93/42 e s.m.i.

WARMING MODE

(Clinically Validated)

for warming of blood, red blood cells, blood products and infusion solutions warming. It is very useful for intensive care, resuscitation, first aid, thalassemia and emophilia planned transfusions



Example of red blood cell bags warming; 270-290 ml. capacity for bag, initial temperature +5°C ± 2°C, bath temperature +32°C ; maximum warming time 10 minutes.

Infusion solution stored at ambient temperature ; 500 ml. capacity for bag, bath temperature +37°C , maximum warming time 8-10 minutes

BloodLine

WR-KWAP (Platelet incubator/agitator)
by KW Apparecchi Scientifici srl

Control K1P

Control HPL

W85RT+ agitator

W96RT HPL + agitator

BloodLine

WR-KWAP (Platelet incubator/agitator)
by KW Apparecchi Scientifici srl

KW Apparecchi Scientifici has developed a new line of platelet incubators/ agitators that offers solutions with many capacities in free-standing and bench-top models.
They are certified as **Medical Device**, in accordance with CEE Directive 93/42 and subsequent amendments and integrations.
They are provided with their own power lead to be able to be inserted in the corresponding KW incubator or in another thermostatting appliance.

INCUBATOR SPECIFICATIONS: T SET +22°C ±1°C

Incubator - Control K1P

Model	Ver.	Mis. Est. WxDxH (cm)	Mis. Int. WxDxH (cm)	Capacity	Bags 450 ml.	Stability T	Uniformity T	Power	Weight* (kg)
W96RT	**T**	**98x65x105**	**80x50x65**	**260 lt**	**Max 96**	**≤ ± 0,5°C**	**≤ ± 0,8°C**	**650W**	**70**
W85RF	**F**	**110x75x200**	**75x55x105**	**430 lt**	**Max 108**	**≤ ± 0,5°C**	**≤ ± 0,5°C**	**850W**	**230**
WRV700	**F**	**72x80x202**	**67x59x151**	**700 lt**	**Max 200**	**≤ ± 1°C**	**≤ ± 0,5°C**	**750W**	**130**
WRV1500	**F**	**144x80x202**	**67x130x151**	**1500 lt**	**Max 400**	**≤ ± 1°C**	**≤ ± 0,5°C**	**900W**	**210**

T = bench-top version F = free-standing version (*) No Agitator

Incubator - Control HPL

Model	Ver.	Meas. Ext. WxDxH (cm)	Meas. Int. WxDxH (cm)	Capacity	Bags 450 ml.	Stability T	Uniformity T	Power	Weight* (kg)
W96RT HPL	**T**	**98x65x105**	**80x50x65**	**260 lt**	**Max 100**	**≤ ± 0,5°C**	**≤ ± 0,8°C**	**650W**	**70**
WRV700 HPL	**F**	**72x80x202**	**67x59x151**	**700 lt**	**Max 200**	**≤ ± 1°C**	**≤ ± 0,5°C**	**750W**	**130**
WRV1500 HPL	**F**	**144x80x202**	**67x130x151**	**1500 lt**	**Max 400**	**≤ ± 1°C**	**≤ ± 0,5°C**	**900W**	**210**

T = bench-top version F = free-standing version (*) No Agitator

Range T :
+18°C +22°C for models W96RT
+5 °C +45°C for models W85RF
+0 °C +50°C for models WRV700 and WRV1500
Power Supply V230/50 Hz

Agitator specifications:

Model	Mis. Est. WxDxH (cm)	Capacity bags	Shelves	Incubator	Power (W)	Weight (kg)
KWAP18	**62x55x51**	**18**	**3**		**600**	**33**
AP48LT	**48,7x41x40**	**48**	**8**	**W96RT/WRV700/WRV1500**	**450**	**30**
AP96LT	**48,7x41x66**	**96**	**16**	**W96RT/WRV700/WRV1500**	**450**	**40**
KWAP54	**70x48,5x66,5**	**54**	**6**	**W85RF**	**600**	**50**
KWAP108	**48,7x41x73**	**108**	**18**	**W85RF/WRV700/WRV1500**	**600**	**80**

-Incubator model **WRV700**: **max n.2 agitators KWAP48 or n.2 agitators KWAP96 or n.2 agitators KWAP108**
-Incubator model **WRV1500**: **max n.4 agitators KWAP48 or n.4 agitators KWAP96 or n.2 KWAP48 + n.2 KWAP96 or n.4 KWAP108**
-Incubator model **W96RT**: **n.1 agitator KWAP48 or n.1 agitator KWAP96 or n.1 agitator KWAP108**
-Incubator model **W85RF**: **n.1 agitator KWAP54 or n.1 agitator KWAP108.**

WRV700 + n.2 KWAP96

BloodLine

Structure and system

External structure and door in sheet steel prepainted or plastic-coated in zinc; on model W85RF an external structure made entirely of AISI 304 stainless steel is an optional feature.
Insulation in natural mineral fibres, with high insulating power **(energy saving),** for models W18RT and W85RF; insulation with polyurethane expanded in situ with a density of 40 kg/mc, for models W48RT and W96RT. The higher capacity model is fitted with a **led light** that turns on when the door is opened.
GREEN ICE project.
Internal chamber and shelves in AISI 304 stainless steel; with rounded edges; the shelves can be positioned as desired through mobile supports on racks; these are placed on the internal walls.
All models have a transparent door (in toughened glass), fitted with magnetic PVC seal.
This allows observation of the platelets without altering the internal T.
The door is key-lockable for the utmost safety.
All WR incubators are easy to clean and decontaminate.
The heating is obtained with special heating elements with low thermal density, for maximum temperature stability; cooling is achieved by a special KW designed evaporator; all heat exchangers are placed in an area separated from the internal chamber, in order to create a very uniform temperature control in the working volume. The temperature control flow is driven by a high efficiency helical fan; in the W85RF model, the temperature control flow can be regulated with an angular speed variator of the fan itself (optional).

The refrigeration system is composed of an air condensing unit, with expansion by means of a capillary tube. There is plenty of condensing surface to allow it to function correctly even at very high ambient temperatures (> +32°C) and/or in environments with little ventilation and poor air exchange.
There is a device that collects and evaporates the condensation water.
The refrigerants used are non-toxic, non-flammable, non-explosive and above all eco-friendly (ODP=0).

Temperature regulation and controls K1P:

• **main ON/OFF** key switch, to prevent inadvertent manipulation for the utmost operating and product safety
• **power ON warning led**
• **digital µP electronic controller with double led display with viewing of the set point and process value (real time); RTD Pt 100 class A sensor**
- **for heating, P.I.D.** (proportional, integral, derivative) regulating action for the utmost stability of the T parameter; use of Ssr static relay (zero crossing); this also makes it possible to maximise energy saving.
GREEN ICE project
- **for refrigeration, ON/OFF** regulating action; use of Ssr static relay.
Possibility of optimising the regulation parameters from the keypad to minimise heating times and prevent dangerous overshooting. A timer function is also available for setting and storing temperature cycles.
• **heating in progress warning light (led)** • **cooling in progress warning light (led)**
• **timer function ON warning light (led)** for programmed temperature cycles
• **set point reached condition warning light (led)**
• **T min/max alarm,** with buzzer and indicator (led) • **door open alarm,** through microswitch
• **energy failure alarm,** mains failure, with 12 Vdc, 2 Ah back up battery with an autonomy of over 12 hours; for longer autonomy, (battery with a capacity of > 2 Ah); ...
Buzzer warning and indicator (led)
• **agitator movement alarm;** max prevention against electrical and mechanical failures; buzzer warning and indicator (led).
• **Overtemperature alarm;** obtained through overtemperature controller, (independent from the main regulator), with adjustable setting; in conformity with DIN Std. 12880 with separate sensor (protection class 3.1), with visual alarm warning on the panel (led) and with heating function cutoff; for the utmost safety of the product, appliance and environment.
• **Muting button** for silencing alarms. All the alarms are remoted through N. C. free contacts.

BloodLine

Panel summary:
Switch O / The key for the ignition
Switch Run (also serves as a silencing audible alarm)
Switch Func (prametri to change the setting, the set, etc.).
Button to increase
Button to decrease
T RED ALARM LED indicates alarm conditions of T min/max
RED LED HEATING, indicates the heat is on
LED RED T COOLING, indicates cooling in place
LED RED SP, indicates that you are changing the set point
RED LED TIMER function indicates the thermal cycle on
LED RED DOOR OPEN, alarm indicating the door is opened
RED LED FAILURE Agitator, indicating absence alarm movement by platelet agitator (OPTIONAL)
RED POWER FAILURE LED indicates power failure alarm
TEMPERATURES OVER RED LED indicates over-temperature alarm (see security system)
GREEN POWER ON LED indicates the power of the machine
Mute button to silence the buzzer on alarm

Temperature regulation and controls HPL

CONTROLLER I-KW SMART CONTROLLER

SD
USB B
SIM GSM
ETHERNET

Display	TFT Touch screen 7.0" wide
Power supply	from Power Board
Dimensioni	197x122x50 mm
Front ports	USB - Slot per SIM Card e SD Card
Ports	Ethernet
Slot	for modem GSM
CPU	Atmel® at91 sam9261 256 Mb flash
	Operating System Linux 2.6.33

Electronic digital controller with microprocessor, **I-KW SMART CONTROLLER** for temperature programming and control. Display visual reporting about the machine operating conditions with a summary window for temperature, and output values.

ALARMS:
• Audiovisual alarm for min/max temperature on internal temperature;
• Audiovisual alarm for no power; • Alarm for open door;
– Up to 16 thermal cycle programs; each can be managed hour by hour in the lapse of 24 hours with the possibility to repeat to infinity.

Total connectivity, traceability and security
Ensuring the maximum connectivity and traceability, the new controller will be able to fully satisfy the needs of pharmaceutical companies and research centers.
Machines with I-KW Smart controllers will be able to count on a total connectivity with the surrounding environment through a series of standard devices; USB port, SD and SIM card slot, Wi Fi connection, Ethernet, RS 485 port with Modbus protocol. The Wi Fi connection will enable the device to be visible in the LAN of the lab, the research center or the industrial lab. Also, it displays a temperature-time graph without using an instrument dedicated to this aim. With the data download through Tracer software, it is possible to produce graphs and tables about any registered data.

Accesses control and facilitated maintenance.
Devices equipped with the new controller can also have a controlled access: the electronic key is optional (the user can customize the numeric code) and associated to an electric lock for a controlled opening or, as a personal device, to use badges or transponders, or finger-passes, with the storage of fingerprints.

BloodLine

WR-KWAP (Platelet incubator/agitator)

Display for setting and reading temperature and humidity values:

I -KW The graphic video interface shows a TFT 7" touch screen color display; ARM 9 microprocessor technology, the same used for smartphones and working with Linux operative system; touch menu with multiple windows and temperature graphs;
On / Off: the access is controlled by the user with a pass-worded electronic key

Control system: Control, registration, supervision, full trace-ability of any parameters and events, full connectivity with the environment, very high operating and access security.
Use of two RTD Pt 100 Ohm independent probes to detect humidity: the first for temperature alarms and the second for humidity alarms. Automatic regulation of temperatures, humidity and alarms; registration in real time of the operating variables on SD card; USB interface on the front panel for the download of thermo-registration data and updates; **Ni – MH buffer battery, power back-up and recharge circuit.**

Set point and alarm threshold modifications: controlled modification through the electronic key with password against intrusions, fortuitous handling and better traceability:

Access to the menu sensible data and parameters: controller access to the software through the use of the electronic key with password for the highest security and compliance with lab standards and procedures.

AGITATORS:

Structure and system

The linear alternative agitators KWAP18 (18 bags - 3 shelves), KWAP54 (54 bags - 6 shelves), KWAP108 (108 bags - 18 shelves), AP48LT (48 bags - 8 shelves) and AP96LT models (96 bags - 16 shelves) allow the organised storage of human blood platelets in plastic bags.

Each unit is characterized by alternate movement and suspended on guides having linear pads; this ensures that the movement is silent and of high reliability. The upper part moves from side to side with a course of 16mm at a frequency of 98 courses per minute. Each shelf has an "open" surface that allows for a ventilation.
The agitator has legs, in metallic material, suitable for placement on the work bench or on the right support.

In the KWAP18 (18 bags - 3 shelves), KWAP54 (54 bags - 6 shelves) and KWAP108 (108 bags - 18 shelves) models, all the shelves are made of AISI 304 stainless steel.

In the AP48LT (48 bags - 8 shelves), AP96LT (96 bags - 16 shelves) models, all the shelves are made of painted steel sheet and plastic material.
The shape and surfaces are in any case all suitable for facilitating cleaning and ensuring long life.

KWAP48

KWAP96

BloodLine

WR-KWAP (Platelet incubator/agitator)

Each shelf may be extracted in order to reach them, while the motor is in movement, without any disturbance to the agitation of the platelets. Furthermore each shelf has a posterior "STOP" that impedes the complete discharge for eventual errors and permits an almost horizontal position suitable to loading the bags without any intervention of the user.
When the shelf has to be removed entirely for cleaning, it must be raised in order to by-pass the "STOP". On the inferior frontal of the appliance there is the command panel with the ON-OFF switch for power supply, having visual signalling.

TEMPERATURE REGULATION AND CONTROLS

The agitator has its own power supply and power lead to be able to be inserted in the corresponding KW incubator,or in another thermostatting appliance. On the front panel there is the main O/I switch with warning light;

PLATELET AGITATOR OSCILLATION SPEED VARIATOR (Optional)

In the KWAP 18-54-108 models, the KWAP platelet agitator can be fitted with an oscillation speed regulator, obtained through a knob outside the appliance. Regulation takes place between about half of the number of nominal oscillations (around 36 strokes a minute), obtained turning the knob to the MIN position, and the number of nominal oscillations, obtained turning the knob to the MAX position (about 72 strokes a minute).

PLATELET AGITATOR MOVEMENT ALARM (Optional)

All the agitators can be fitted with a movement alarm, obtained through a special sensor positioned inside the agitor itself. Should agitating be interrupted following a failure, an alarm is activated on the incubator for the utmost product safety. The alarm is cut off when the incubator door is opened and the agitator movement is stopped for operator safety.

STROKE COUNTER (Optional)

Diplays races

In the incubators/agitators it is possible to install:

- Pt 100 sensor, class A, for connection to a wireless data logger (Spy KW) or to another T monitoring system

• Personal Key, with electronic lock, for controlled access and traceability

A standard feature is a graphic temperature recorder on disk with weekly cycle, powered at 1.5 VDC, or, alternatively, a class A Pt100 sensor, arranged for connection to a WiFi data logger (Spy KW)

BloodLine

KW SPY

WiFi DATA LOGGER FOR DETECTING TEMPERATURES AND ANALOGUE SIGNALS

Medical Device (class IIA), in accordance with CEE Directive 93/42 and s.m.i.

BloodLine

KW SPY

WiFi DATA LOGGER FOR DETECTING TEMPERATURES AND ANALOGUE SIGNALS

The **KW.S2000 wi-log** module is the ideal solution for the management and remote control of laboratory environments and equipment: fridges and freezers, microbiological incubators (O2, CO2, HR) and many other pieces of equipment with 4/20mA outputs.

The **S2000** is also portable and can record temperatures during the transportation of biological material. **S2000** is certified as **Medical Device (class IIA)**, in accordance with CEE Directive 93/42 and subsequent amendments and integrations.

Fitted with double powering (internal batteries and optional external power supply unit), the device offers the possibility to monitor a large range of physical quantities. Indeed, the S2000 has one or two ports that can be configured for reading:

- **PT1000 RTD** sensors (Resistance Temperature Detector) with measurement accuracy of +/-0.2°C. (code S2000-P1 for one sensor and S2000-P2 for two sensors)

- **4/20mA analogue signals** leading from sensors of many types (O2 sensors, CO2 sensors, pressure sensors, etc.) and with an accuracy of +/-30 µA. An external power supply unit is needed if the sensors are passive.

Due to a special sensor inside the module, it is possible to detect the **temperature and relative humidity** in the environment, contributing to the safety and traceability of the work areas

It is possible to **set 4 alarm thresholds for each sensor** used and associate a delay to each of them for triggering alarm signals. These signals are visual (red led on the module front panel), acoustic (buzzer) and via relay with NC and NO contacts.

The values of the physical quantities detected by the S2000 are acquired on the basis of the sampling time set by the user, which is variable between two seconds and one hour. **The recording capacity is over 250000 records.**

For example, making one record per 5 minutes the module can collect data for over 30 months!! All the information concerning the values read by the sensors at the input, the status of the module (e.g. the type of power supply used) and any active alarms are stored to ensure the utmost safety and reliability of the system.

All the records are sent in block, via WiFi network to a PC running the dedicated software (**eagle.lab**) developed for recording and displaying all the data.

TECHNICAL SPECIFICATIONS S2000:

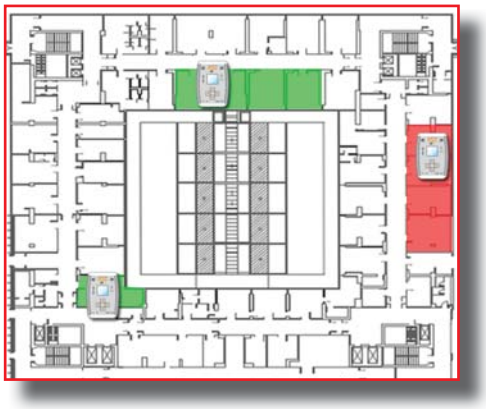
- Battery power supply (average foreseen duration: 3 years)
- Option for external power supply from ~230 V mains
- Installation with one or two ports that can be configured as:
  - RTD sensor reading (PT 100 or PT1000)
  - Reading of two 4/20mA signals in active or passive mode (with external power supply if the sensor is passive)
- Possibility of environment temperature and relative humidity reading
- Automatic instrument calibration during measurement
- Possibility of setting sampling times (from 2 to 3600 seconds)
- Parameter setting of each sensor: offset for RTD correction, 4 alarm thresholds with the possibility to individually delay the alarms, and sensor failure indication possibility (open/shorted)
- Very low consumption graphic LCD display with SHARP "LCD Memory" technology
- Battery status display
- Power supply mode display (battery or external power supply unit)
- Transmission status and available signal display
- Data storage on permanent memory (input measurement, module status information, alarms, etc.)
- Storage capacity over 250000 records
- Possibility to programme the storage frequency on permanent memory
- Output for allowing the remote control of alarms with clean NC/NO contacts
- Red led for indicating alarms (only with external power supply) that can be set as ON/OFF/flashing
- Buzzer for sounding alarms (only with external power supply) that can be set as ON/OFF/intermittent
- Data transmission via Wi-Fi IEEE 802.11 b/g network
- 4 buttons on the front panel for local programming
- **Medical Device (class IIA), in accordance with CEE Directive 93/42 and s.m.i.**
- CEI EN 61010-1 - Standard of reference
- Directive EMC 89/366/ECC Electromagnetic Compatibility
- Directive LVD 73/23/ECC Low Voltage Directive
- Directive R&TTE 1999/5/EC The European Radio equipment and Telecommunications Terminal Equipment

With **WiFi technology** it is possible to overcome the wiring limits of conventional systems, reducing costs and positioning restraints of the areas/equipment monitored.

On the front panel the device has a very low consumption **LCD display** that shows the values of the physical quantities measured and helpful information such as the type of power supply used, the battery charge status and information about the signal available for data transfer. The front buttons make use and programming both simple and intuitive.

BLOODline

The Supervision System

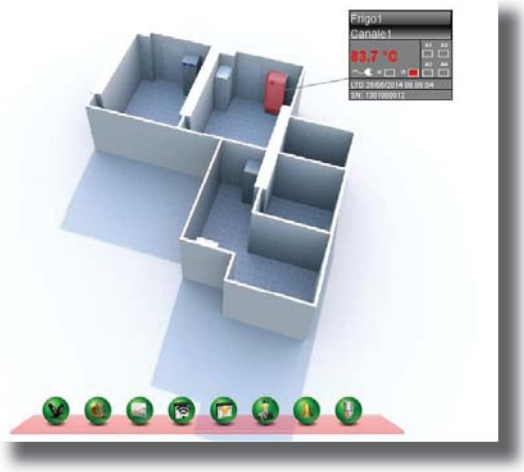


The supervision system **eagle.lab**, is a SCADA (Supervisory Control and Data Acquisition) capable of monitoring equipment Biological Laboratories.
Eagle.lab certified as a medical device. Is a modular system consisting of:

- The S2000 modules (Data Logger with built-in memory) that control field devices via PT1000 probes .

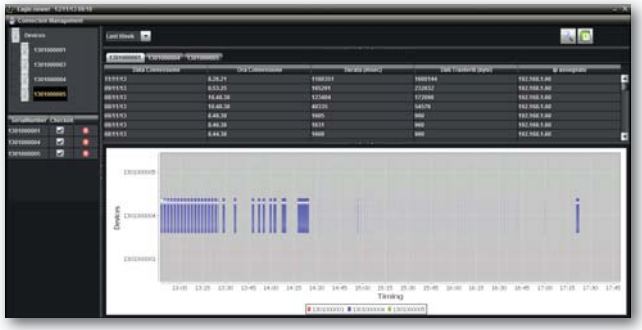
- The PC/(SERVER (connected to the intranet of the structure) using the software KW maintains a database and performs the function of web server.

Thanks to the system KW SPY it is possible to monitor in real time the status of all the controlled equipment.
The plants of the laboratories are shown with synoptic reports, to scale.
It is possible to interact with the maps using the appropriate menu.



Among the main features:

- Real-time display of the alarms detected
- Real-time display of temperatures.
- Storage of measured values with a frequency set by the operator
- Storage of events and alarms
- Reconstruction of the data in graphical and tabular form , exportable in excel format
- Submission of reports alarms via telephone dialer S140 in voice form and/or SMS on GSM network
- inspection by intranet and/or Internet via **eagle.viewer.**
- Ability to make an "inspection" by operators with printing of the activities of the entire system.
- Ability to change the alarm thresholds can be local or remote (on as Administrator)
- Ability to create reports and store data that conforms to **21 CFR Part 11**
- Multilingual Support



The system is based on a powerful DBMS via which it is possible to reconstruct in tabular or graphical form the trend of the recorded quantities. Similarly, in the database are stored alarms occurring in the plant with date-time-event activation and restoration of the normal condition.

The system is used by multiple operators connected in a local network (intranet) or remote (internet). Thanks to the Internet, skilled technicians are able to provide immediate support in case of anomalies.

ISO 9001:2008 ISO 13485:2012 ISO 14001:2004 OHSAS 18001 2007

KW APPARECCHI SCIENTIFICI s.r.l.
53035 Monteriggioni (SI) Via della Resistenza, 119
Tel. +39 0577 309143 / 309145
www.kwkw.it export@kwkw.it

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KW APPARECCHI SCIENTIFICI s.r.l.
53035 Monteriggioni (SI) Via della Resistenza, 119
Tel. +39 0577 309143 / 309145
www.kwkw.it kw@kwkw.it expdpt@kwkw.it